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The Society of the New York Hospital,

March, 1898.





ANNUAL REPORT

OF THE

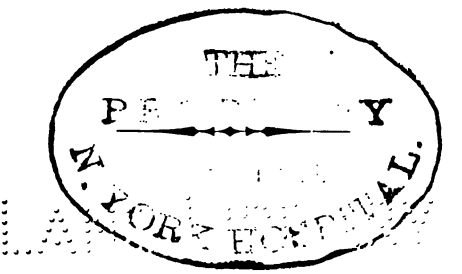
SUPERVISING SURGEON-GENERAL

OF THE

MARINE-HOSPITAL SERVICE OF THE UNITED STATES

FOR THE

FISCAL YEAR 1886.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1886.

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TREASURY DEPARTMENT,
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Marine Hospital Service.

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OPERATIONS

OF THE

UNITED STATES MARINE-HOSPITAL SERVICE.

1886.

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REPORT.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL
MARINE-HOSPITAL SERVICE,
Washington, D. C., September 30, 1886.

SIR: I have the honor to submit the following report of the operations of this Service for the fiscal year ended June 30, 1886, being the eighty-eighth year of the Service, and its fourteenth annual report.

Owing to the fact that the end of the fiscal year falls so near the opening of the quarantine season, an account of the operations of this branch of the work of the Service to the date of this report is included, following the plan of previous reports.

RELIEF FURNISHED.

Patients relieved (a slight increase over the previous year)	43,822
Treated in hospitals	12,624
Treated in dispensaries	31,198
Days' relief in hospital furnished	316,205

When the service was supported by a tax upon the beneficiaries it was held that those only who had contributed to the fund could receive relief from it, but soon after the enactment of the law providing for the support of the service from the tonnage tax, applications for relief began to be received from fishermen, claiming that as their vessels paid tonnage duty they became contributors to the fund. The matter was referred to the Solicitor of the Treasury, and on the receipt of his opinion the following circular was issued:

Fishermen entitled to treatment in marine hospitals.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL, U. S. M. H. S.,
Washington, D. C., October 29, 1885.

To Medical Officers of the Marine-Hospital Service and others concerned:

The following opinion of the Solicitor of the Treasury, in regard to the extension of the benefits of the Marine Hospital Service to fishermen, is published for your information and guidance.

In accordance therewith, persons employed on vessels of the United States engaged in the fisheries will hereafter be admitted to treatment under the same regulations and conditions as other American seamen.

JOHN B. HAMILTON,
Supervising Surgeon-General, M. H. S.

DEPARTMENT OF JUSTICE,
OFFICE OF THE SOLICITOR OF THE TREASURY,
Washington, D. C., October 23, 1885.

SIR: Section 4585, R. S., provided for the collection of forty cents a month hospital tax from each seaman employed on every vessel of the United States arriving from a foreign port and every registered vessel engaged in the coasting trade.

Under this section the Treasury Department has held that seamen employed on vessels licensed for the fisheries are not liable to this hospital tax. But by section 4803, the money thus collected from seamen was appropriated for the care of sick and disabled seamen employed in registered, enrolled, and licensed vessels of the United States.

By section 4311 enrolled vessels of twenty tons and upwards, and less than twenty tons, having a license in force, are vessels of the United States, and entitled to all the privileges of vessels employed in the coasting trade or fisheries.

All registered, enrolled, and licensed vessels are, therefore, documented vessels of the United States within Par. 146 of the regulations of your office.

It will be seen, however, that the statute giving the benefit of the hospital service is broader than that giving authority to collect the tax.

Section 4585 has been repealed, and the expense of maintaining the Marine-Hospital Service is now borne by the United States out of the receipts from duties on tonnage, but the law designating the persons entitled to be admitted to marine hospitals has not been changed.

I am, therefore, of the opinion that seamen employed on vessels licensed for the fisheries are entitled to the benefit of this service.

Very respectfully,

A. McCUE,
Solicitor.

TREASURY DEPARTMENT,
October 28, 1885.

Approved.
DANIEL MANNING,
Secretary.

Previous to this decision it had always been regarded as a hardship that fishermen, especially those engaged in whaling, were ruled out of the hospitals; but this source of complaint is now happily removed.

RECEIPTS AND EXPENDITURES, 1885–'86.

The receipts from all sources were $515,316.91, and the expenditures $433,795.99. This does not include the expenses for "repairs and preservation of marine hospitals, fuel, light, and water, furniture and repairs to furniture," &c., which were paid for out of special appropriations.

Summary.

Receipts, tonnage tax collected	$508,409 54
repayments to the Marine-Hospital Service (on account of foreign seamen)	6,907 37
Total available receipts	515,316 91
expenditures	433,795 99
Surplus covered into the Treasury	81,520 92

There have been expended from special appropriations:

From the appropriation for repairs and preservation of marine hospitals (by the Supervising Architect)	$20,525 74
Furniture and repairs of furniture	25,185 86
Vaults, safes, and locks for public buildings	279 85
Fuel, lights, and water	34,799 19
Heating, hoisting, and ventilating apparatus	14,776 66
Making a total expenditure on these appropriations of	95,567 30

It is thus seen that even at the present low rate of tonnage tax, the tax is sufficient to support the necessary general expenses of the service, with the exception of the amount necessary for fuel, light, and water. Special appropriations are required, however, for such extraordinary alterations and repairs as are from time to time necessary for the older hospitals. A particular account of each hospital will be given further on.

PURVEYING DIVISION.

The following is a summary of the supplies purchased at this office for issue during the year:

Medical supplies	$11,089 25
Furniture, beds, bedding, and clothing	27,333 87
Instruments and appliances	2,827 42
Hospital stores	1,850 46
Medical books and medical journals	1,061 90
Miscellaneous	3,596 08

In addition to supplies furnished to the Marine-Hospital Service in general, the vessels of the Revenue-Marine Service and the various quarantine stations have also been supplied from the purveying division of this office, and the fund has been reimbursed from the appropriation for those services.

Number of requisitions received and filled for the various stations, 534.

Laboratory and warehouse.

A well-appointed laboratory, for the convenient manufacture of such preparations as are now made here, and a larger store-room for the handling of supplies for the various hospitals, would add greatly to the efficiency of this division of this office. A sketch plan is herewith submitted in connection with that for the proposed National Sailors' Home, which, if approved, would give the necessary facilities. An entirely unsuitable building is now used for the purpose, but no more convenient arrangement can be made at present. If the store-room were larger, many articles not now kept in stock could be purchased in larger quantity at better rates, and be subject to more complete inspection. In my judgment all non-perishable articles needed for use in the hospitals should be kept in stock.

Hospital at Baltimore.

This hospital is now nearly completed, but occupancy is delayed on account of the exhaustion of the last appropriation for heating apparatus, and that there was no appropriation for approaches. These matters having been remedied since the close of the fiscal year by the coming into effect of the new appropriations, it is presumed that the building will be occupied this winter.

Hospital at Boston.

This hospital, situated at Chelsea, is in bad repair, and while the worst defects will be remedied out of the present general appropriation, a special appropriation is needed for new heating apparatus, new floors, and repainting. The heating apparatus has been in use since 1859 or 1860; is out of level, and badly rusted.

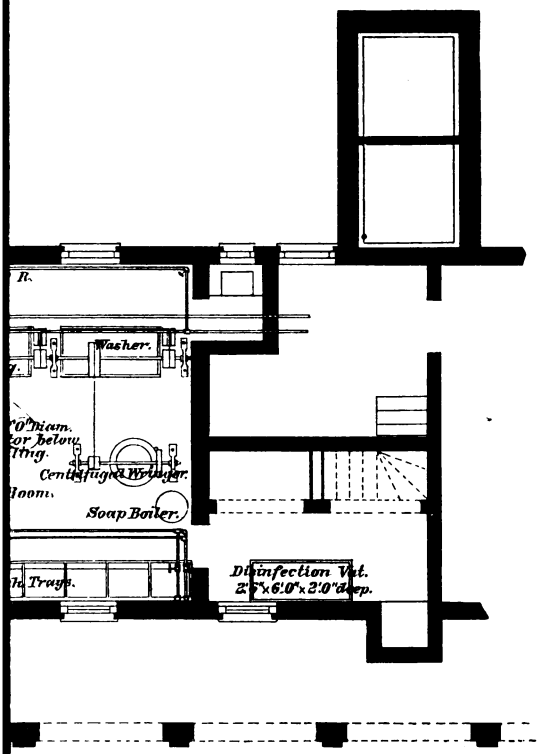
Marine Hospital at Cairo, Ill.

This hospital is in good condition, and the recent appropriation for approaches will enable the Supervising Architect to build the fences and sidewalks.

Hospital at Chicago.

This, the largest hospital in the service, is still in need of extensive appropriations. The breakwater constructed last year for the preservation of the shore frontage has been largely broken away by the waves, and needs renewal. Some of the piles washed ashore, and it was found that some of them were only 8 feet long. I reported the matter to the Department, and it was investigated. The superintendent of the work is dead, and the Department is considering the question of bringing suit against the contractor. In the meantime the lake goes on encroaching on the front, and an additional appropriation is necessary. The condition of the grounds around this hospital has been so often reported that the facts have lost their freshness. I repeat them once more, in the hope that an appropriation may be obtained to put the grounds in proper order. The hospital was begun in 1867, located on a sand-bank on the lake side, about six miles north of the Chicago River. The sand has never been graded, sodded, or turfed, and the level of the hospital lot changes with the wind-storms. The fence in front is now old; and should be replaced with a new one; it was a temporary board structure in the beginning, which the architect thought would last until an iron fence, in keeping with the handsome design of the building, could be constructed. Twenty years have passed, and the boards, much discolored and worn, are still waiting for the improvements so long ago asked for. A new steam boiler is needed.

HEATING AND LAUNDRY APPARATUS, U. S. MARINE HOSPITAL, BALTIMORE, MD.



JOHN B. HAMILTON,
Supervising Surgeon General,
Marine Hospital Service.

M. E. BELL,
Supervising Architect,
Treasury Department.

Hospital at Cairo.

This hospital is now in good order, and needs nothing beyond current repairs.

Hospital at Cincinnati.

This hospital also needs nothing but current repairs.

Hospital at Detroit.

This hospital is too small for the needs of the port, for reasons fully set forth in the last annual report. By building new quarters for the officers, and utilizing the space thus obtained for additional ward space, the necessary room can be obtained at a minimum expense. This arrangement would also add to the efficiency of the administration of the hospital, which in winter is always over-crowded. This building, with the exception of the halls, is now heated by old-fashioned brick furnaces, which leak gas and are inadequate. New heating apparatus should be supplied. This, I am informed by the supervising architect, will be done this year under the present appropriation.

Hospital at Key West, Fla.

No repairs have been made at this hospital except those of a minor character for many years, except the building of a sea-wall for the protection of the grounds. This sea-wall is now completed, and is generally in excellent condition, and fully subserves its purpose. Repairs are needed to the roof. The plaster also needs renewal, and the hospital needs painting outside and inside. The bath-houses and water-closets at this hospital are built on piles which project out from the sea-wall about sixty or seventy feet. Many of the piles are now rotten and worm-eaten and need replacing.

Hospital at Louisville, Ky.

This hospital is in fair condition.

Hospital at Memphis, Tenn.

This hospital is in fair condition.

Hospital at Mobile, Ala.

About $1,000 will be required for repairs of this hospital during the next fiscal year.

Hospital at New Orleans, La.

In the plans of this hospital three wards were contemplated, but the center one has never been built, nor has any heating apparatus been supplied. Owing to the dampness that prevails in the winter some

form of heating the wards is necessary. The wards at present are lighted by kerosene, the city gas pipes not having been extended from Tchoupitoulas street.

Efforts will be made during the year to induce the gas company to make the necessary connection. Failing in this, electric lighting should be adopted. A suitable fence should be built surrounding these grounds, as nothing whatever has been done except what could be done by the labor of the employés in grading the grounds and completing the approaches.

Hospital at New York.

As reported in nearly every annual report of this Bureau since 1874, there is no hospital at the port of New York owned by the Government for the treatment of its merchant sailors, notwithstanding the conceded necessity of a hospital at this great maritime center. An appropriation of $250,000 is asked to enable the Secretary of the Treasury to purchase a site and erect thereon a suitable hospital, built according to modern plans.

Hospital at Port Townsend, Wash.

About $500 will be required to make such current repairs as are necessary during the year. Passed Assistant Surgeon Devan reports the following repairs as having been made during the last fiscal year:

The main hall in the building, terminating in a cross-hall with open ends, and therefore exposed to rain and wind, has been provided with one door on each end, to keep the buildings near the desired temperature.

The ward located upon the first floor having only one door, and that opening directly out of doors, has been provided with one door 3 by 7 feet, in order to reach the hallway of the building and the operating-room.

The upstairs wards were at still greater inconvenience, the only method of reaching them being by a long flight of stairs outside of the building and entirely uncovered. These inconveniences working hindrance to the service in many ways, and to avoid accidents during the winter season, one stairway 3 feet 2 inches wide has been built from cross-hall to back ward, upstairs extremity of which has been provided with landing and door, and one stairway from lower floor to the upper front ward, 3 feet 6 inches wide, has been provided with landing and door.

The window caseings have been repaired so that the sashes are fitting tightly and provided with catches. All of the door sills nearly have been renewed and the doors fitted.

The cracks and breakages in ceiling and paper at the surgeon's quarter have been repaired.

The shelving upon which the blanks and records of the hospital are kept has been fitted out with doors and locks, and the back of the fire-place at the United States marine hospital has been repaired.

The outside steps at the surgeon's quarter have been repaired and the underpinning generally has been made secure.

A hole 10 feet deep, 10 feet long, and 6 feet wide has been made for water-closet purposes and covered with the old latrine building, and the former site has been filled with lime and earth.

Hospital at Portland, Me.

Minor repairs only were made to this hospital during the year, and few are now needed.

Hospital at San Francisco, Cal.

The heating apparatus at this hospital is in bad condition, and numerous other repairs of a minor character are needed.

Hospital at Saint Louis, Mo.

This hospital is now in good condition, and but few repairs are needed.

Hospital at Vineyard Haven, Mass.

At this hospital minor repairs only have been made during the year.

Hospital at Wilmington, N. C.

This hospital is too small for the needs of the service, and during the last year the hospital has been so crowded that attendants were obliged to be lodged in the cupola. The construction of quarters outside of the building for medical officers would give the additional ward space needed.

With the exceptions noted in the foregoing statement, the hospitals generally are in excellent condition.

MEDICAL CORPS.

Appointments.

One examining board was convened during the year for the examination of applicants for admission into the service, and three candidates who passed the examination successfully were appointed assistant surgeons, taking rank in the order of merit. The service is open to all regular graduates in medicine, between the ages of twenty-one and thirty years, without regard to political preferences.

Acting assistant surgeons have been reappointed at Delaware Breakwater and Cape Charles quarantines for duty during the quarantine season. The bill regulating appointments has been approved by the Senate Committee on Commerce, and is now on the Calendar. It is hoped that it will pass at an early day.

Promotions.

Three assistant surgeons were promoted to be passed assistant surgeons, in accordance with the regulations authorizing such promotions after three years' service and passing satisfactory examinations; and one passed assistant surgeon was promoted to be a surgeon.

Casualties.

Since the last report one passed assistant surgeon has resigned and one assistant surgeon (P. H. Bennett) died.

THE QUARANTINE SERVICE.

Vessels Boarded and Inspected.

The number of vessels inspected at the several quarantine stations is as follows:

	May.	June.	July.	August.	September.
Cape Charles	11	15	12	9	3
Delaware Breakwater	39	59	61	49	32
Ship Island	10	8	11	15	6
South Atlantic Quarantine (Sapelo Sound)				1	1

No epidemic diseases have been imported into the United States during the past year.* Cholera has been threatened from Europe. This disease, which last year extended from Marseilles and Toulon to Sicily and various towns on the west shore of Italy, has extended to the eastern shore, to Fiume and Trieste at the head of the Adriatic, and several towns in Austria, and has appeared on the Danube at Buda-Pesth at the time of sending this report to the printer. In each of the districts named the disease has exhibited its usual virulence. At Trieste during the month of August there were 290 cases and 198 deaths. As usual, the disease haunts the houses of those too poor or too negligent to pay regard to cleanliness of person and surroundings. A map showing the progress of the disease in Europe is subjoined.

Mention was made in the last report of the Canadian small-pox epidemic which had passed beyond the control of the Canadian health authorities, and the initial steps taken to prevent its spread into the United States were mentioned as having begun on the Michigan frontier. The following regulations were issued:

Regulations for the maintenance of quarantine inspections on the northern frontier of the United States.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE,
Washington, D. C., October 10, 1885.

To the Medical Officers of the Marine-Hospital Service,
Customs Officers, and others concerned:

The act approved April 29, 1878, entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," provides that no vessel or vehicle coming from any foreign port or country where any contagious or infectious disease exists, or any vessel or vehicle conveying persons, merchandise, or animals affected with any contagious disease, shall enter any port of the United States, or

* While this report was passing through the press a fever of a suspicious character is reported at Biloxi, Miss. The Government has not yet been called upon to extend any aid, and the matter is under the management of the local authorities.

pass the boundary line between the United States and any foreign country, except in such manner as may be prescribed under said act.

Attention is now directed to the prevalence of the contagious and infectious disease of small-pox in Montreal and other places in the Dominion of Canada, and the law referred to is held to apply alike to trains of cars and other vehicles crossing the border and to vessels entering ports on the northern frontier.

Because, therefore, of the danger which attaches to the transportation of persons and baggage, and articles of merchandise, or animals, from the infected districts, the following regulations are framed, under the direction of the Secretary of the Treasury, and subject to the approval of the President, for the protection of the health of the people of the United States against the danger referred to:

1. Until further orders all vessels arriving from ports in Canada, and trains of cars and other vehicles crossing the border line, must be examined by a medical inspector of the Marine-Hospital Service before they will be allowed to enter the United States, unless provision shall have been made by State or municipal quarantine laws and regulations for such examination.

2. All persons arriving from Canada by rail or otherwise must be examined by such medical inspector before they will be allowed to enter the United States, unless provision has been made for such examination as aforesaid.

3. All persons coming from infected districts, not giving satisfactory evidence of protection against small-pox, will be prohibited from proceeding into the United States until after such period as the medical inspector, the local quarantine, or other sanitary officer duly authorized, may direct.

4. The inspectors will vaccinate all unprotected persons who desire, or are willing to submit to, vaccination free of charge. Any such person refusing to be vaccinated shall be prevented from entering the United States.

5. All baggage, clothing, and other effects, and articles of merchandise, coming from infected districts, and liable to carry infection, or suspected of being infected, will be subjected to thorough disinfection.

6. All persons showing evidence of having had small-pox or varioloid, or who exhibit a well-defined mark of recent vaccination, may be considered protected, but the wearing-apparel and baggage of such protected persons who may come from infected districts, or have been exposed to infection, will be subjected to thorough disinfection as above provided.

7. Customs officers and United States medical inspectors will consult and act in conjunction with authorized State and local health authorities so far as may be practicable, and unnecessary detention of trains or other vehicles, persons, animals, baggage, or merchandise, will be avoided so far as may be consistent with the prevention of the introduction of diseases dangerous to the public health into the United States.

8. Inspectors will make full weekly reports of services performed under this regulation.

9. As provided in section 5 of said act, all quarantine officers or agents acting under any State or municipal system, upon the application of the respective State or municipal authorities, are empowered to enforce the provisions of these regulations, and are hereby authorized to prevent the entrance into the United States of any vessel or vehicle, person, merchandise, or animals prohibited under the act aforesaid.

10. In the enforcement of these regulations there shall be no interference with any quarantine laws or regulations existing under or to be provided for by any State or municipal authority.

JOHN B. HAMILTON,
Supervising Surgeon-General U. S. Marine Hospital Service.

Approved.
DANIEL MANNING,
Secretary.

Approved.
GROVER CLEVELAND.

The epidemic over, the quarantine was raised by the operation of the following circular:

Revoking regulations issued October 10, 1885, *for the maintenance of quarantine inspection on the northern frontier of the United States.*

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL, U. S. M. H. S.,
Washington, D. C., March 17, 1886.

To the Medical Officers of the Marine-Hospital Service,
Customs Officers, and others concerned:

Official information having been received that the small-pox which recently prevailed as an epidemic in certain provinces of the Dominion of Canada is now under control; therefore the regulations issued October 10, 1885, for the maintenance of quarantine inspections on the northern frontier of the United States are hereby revoked.

JOHN B. HAMILTON,
Supervising Surgeon-General.

Approved.
DANIEL MANNING,
Secretary of the Treasury.

Approved.
GROVER CLEVELAND.

The reports of the medical officers engaged in this work are as follow, in which full details of the operations are given. The measures taken were entirely successful, and it is believed that no case of small-pox was admitted into the United States across the border:

SURGEON AUSTIN'S REPORT.

U. S. MARINE HOSPITAL,
Port of Boston, Mass., June 30, 1886.

SIR: In conformity with Department order dated November 21, 1885, I have the honor to submit the following report of the operations of the sanitary inspection service, established on the Canadian frontier of the United States, extending from Buffalo, N. Y., to the Atlantic coast, during the months of September, October, November, December, 1885, and January and February, 1886.

The exigency demanding quarantine measures by the United States Government was the prevalence of a great epidemic of small-pox in Canada, primarily and principally in Montreal and other cities and towns in the province of Quebec. The commercial and social relations of the people of the United States with those of the Dominion of Canada; the contiguity of territory, in part without natural division or boundary, and the direct connection by railroads, rivers, lakes, and highways, are conditions most favorable to the spread of contagious and infectious diseases.

A glance at the progress of the disease from its inception to the time when it became a great epidemic, will show the necessity for and explain some of the measures taken by the United States Government.

In referring to the official reports of the Montreal health authorities and other reports of the epidemic published in the Montreal daily papers, it is found that the first case of small-pox during the year 1885, occurring in Montreal, was in February, but the first death from small-pox did not occur until April of the same year.

It might, however, be well to state in this connection, that small-pox prevailed in epidemic form in Montreal during a part of each year from 1875 to 1881, and that the mortality from this disease during that period was over three thousand.

In Montreal during April and May a few cases of small-pox were reported, but in June, 1885, every known case was isolated in the civic hospital and the houses disinfected from which the patients were taken.

During July the disease spread through many streets in Montreal and reached the suburbs, and the mortality for the month was forty-six.

The epidemic rapidly increased during August and found lodgment in many of the smaller towns in the province of Quebec.

From these smaller towns the disease made rapid progress during September, invading other towns and localities in the Dominion, and a few cases were reported in the New England States having their origin in Montreal.

The epidemic had passed beyond the control of all the health authorities and sanitary organizations in the province and was depopulating the city of Montreal at the rate of nearly 1 per cent. per month; the total number of deaths in that city during October being thirteen hundred and ninety-three (1,393).

The danger of the introduction of the disease into the United States was probably greater during the month of November than at any other period, owing to the numerous towns in Canada in direct communication with this country by rail when the disease prevailed in epidemic form, and where no precautions had been taken by the local health authorities.

On September 18, 1885, I received an order from you to confer with the State health authorities of Massachusetts relative to measures to be taken to prevent the introduction of small-pox into the State. On the same date a conference was had with Dr. S. W. Abbott, State health officer of Massachusetts, and Dr. S. H. Durgin, chairman of the Board of Health of the city of Boston.

The subject was fully considered and a general plan agreed upon. The measures proposed were presented on the same date, at a conference of the chief officers of the Vermont Central Railroad, Boston and Lowell Railroad, Passumpsic Railroad, Southeastern Railroad, and the Grand Trunk Railroad.

The representatives of the different roads evinced their willingness to co-operate and render all assistance possible, and to furnish free transportation to sanitary inspectors over their roads.

The conclusions of the conference were that sanitary inspectors should be placed on all trains bringing passengers from Montreal over the several railroads entering the United States through New York and Vermont; that inspection aboard trains should be done in Canada or in towns in the United States near the border; that all passengers should be vaccinated unless a recent mark of vaccination could be exhibited, and that all baggage believed to be infected should be disinfected at the first station on the American side of the border.

I forwarded to you, on the evening of the same date, a report of the conference. Obedient to your order dated September 23, directing me to proceed to Burlington, Vt., and recommend sanitary inspectors for appointment at stations agreed upon in conference with State health authorities of Massachusetts, I arrived at Burlington September 23.

Vermont having no State board of health or other State health authority, I invited Dr. A. P. Grinnell, dean of the medical department, University of Vermont, also Dr. Joseph Lindsley, health officer of Bur-

lington, to confer with me, and to suggest the names of competent physicians for appointment to act as sanitary inspectors on the different railroads entering Vermont from Canada.

An arrangement was made with Hon. B. B. Smalley, collector of customs at Burlington, to have all United States customs inspectors on duty at the Bonaventura depot, Montreal, and those employed aboard trains leaving Montreal for the United States, assist United States sanitary inspectors in the inspection of baggage and freight and in the execution of the sanitary regulations.

A suitable room for a general office was assigned me in the United States custom-house by Collector Smalley, and it was made headquarters for the distribution of vaccine virus, disinfectants, &c.

September 25, I arrived at Saint Albans, Vt., the first station of importance on the Vermont Central Railroad, south of the Canadian frontier and about 70 miles from Montreal. After making inquiry relative to the schedule time of passenger trains coming from Montreal over this route, with reference to the inspection of each train while under way, and without causing delay, it was considered necessary to appoint two sanitary inspectors to inspect passengers and baggage, and to employ two persons to assist the inspectors in the work of disinfecting baggage and freight.

A suitable room for the fumigation of infected baggage could not be obtained at the depot, and it was found necessary to erect a building for the purpose. An arrangement was made with two physicians residing in Saint Albans to act as sanitary inspectors on the Vermont Central Railroad, and verbal instructions were given relative to their duties.

Richford, Vt., the first station on the Southeastern Railroad, south of the northern boundary of the State, and in direct communication with Montreal by rail, was made an inspection station. Two sanitary inspectors were necessary to inspect trains from Montreal on the Southeastern Railroad, and two physicians, residing in Richford, were appointed for the duty; a building was constructed for the fumigation of baggage, and a man employed to do the work.

Newport, Vt., located on the line of the Passumpsic Railroad, a few miles from the Canadian border, and in direct communication by this road with Montreal, and also with the cities and villages along the lines of the different railroads extending east into the lower part of the province of Quebec, was made a sanitary station.

The schedule time of trains over the Passumpsic Railroad was such that each train bringing passengers from Canada to the United States, could be inspected by one inspector without causing delay; a physician residing in Newport was appointed sanitary inspector for this road, and a man employed to assist him in the disinfection of baggage, &c.; a building was procured and fitted up for use for the fumigation of baggage and freight.

The division of the Grand Trunk Railroad, extending from Montreal to Portland, Me., connecting with the International, North Shore, and Quebec Central Railroads, was the next locality to receive attention. A large building for the disinfection of baggage and freight was erected at Island Pond, Vt., a few miles from the Canadian boundary. A physician residing in the place was appointed sanitary inspector to inspect the trains over this road. His inspection route extended from Richmond, Quebec, to Island Pond, Vt. Two men were employed at this station to disinfect baggage and freight.

I returned to Burlington, where I secured the services of a physician to inspect the trains over the Grand Trunk Railroad coming from Mon-

treal to the United States by the way of Rouse's Point, N. Y. A physician was also placed on duty on the Champlain and Vermont Central Railroad bridge crossing the Richelieu River at Alburgh, Vt., to inspect vessels coming from Canada up the Richelieu River before they were permitted to pass through the draw-bridge.

No specific instructions for the guidance of sanitary inspectors having been furnished by the Department at this time, the following rules for temporary guidance were prepared, printed, and sent out and the inspectors placed on duty:

"*Regulations for sanitary inspectors.*

"The following instructions will be observed by the sanitary inspector on the following-mentioned railroads crossing the United States boundary line, viz: The Grand Trunk Railway, at Rouse's Point, N. Y., and Island Pond, Vt.; the Passumpsic Railroad, at Newport, Vt.; the Central Vermont Railroad, at Highgate Springs or Saint Albans; the Canada Atlantic, at Rouse's Point, N. Y.; and the Southeastern Railway, at Richford, Vt.

"All persons bound for the United States coming from Montreal, or other places in Canada where small-pox prevails, must produce satisfactory evidence to the inspector that they are protected by a recent vaccination, or submit to this operation before they are allowed to cross the boundary line.

"Inspectors will vaccinate all unprotected persons free of charge.

"Persons coming from Montreal, or suburban villages, will be carefully questioned as to their residence, whether small-pox has occurred in their families, or whether they have been in contact with the disease.

"Inquiries should also be made relative to their baggage, whether it consists of bedding, household goods, &c., likely to be infected, and if any persons or article of baggage is considered by the inspector infected or likely to introduce the disease into the country, he or it should not be permitted to cross the line into the United States.

"You may consider persons protected who may show evidence of having had the small-pox or varioloid, or who exhibit a well-defined mark of vaccination.

"You may accept as evidence of protection a certificate from any physician in good standing that the person presenting the same has been successfully vaccinated. Should you doubt the validity or authenticity of the certificate, you may refuse any such person presenting the same the privilege of crossing the border unless he submits to vaccination. Baggage known to have come from any infected district and believed to be infected will be thoroughly fumigated with sulphur at the following points, viz: Rouse's Point, Saint Albans, Richford, Newport, and Island Pond.

"Weekly reports should be made to Surgeon H. W. Austin, United States Marine-Hospital Service, Burlington, Vt., of the number of trains inspected, number of persons examined, number of persons vaccinated, number of pieces of baggage fumigated, and any other information relative to services performed by the inspector.

"H. W. AUSTIN,
"*Surgeon, United States Marine-Hospital Service.*
"B. B. SMALLEY,
"*Collector of Customs, District of Vermont.*"

It will be observed that all the railroads, five in number, over which passengers or freight might be brought direct from Canada into the New England States were guarded.

Inspection of trains over the above-mentioned railroads commenced September 29, 1885, five days from receipt of my orders at Boston.

By your direction, a physician, nominated by the State health authorities of Maine, was placed on duty at Moose River, Me., October 1, 1885, to inspect immigrants coming from Canada into that State, and the same rules governing the sanitary inspectors along the Vermont border were furnished him.

Moose River is located in the northwestern part of the State, near the headwaters of the Kennebec River, 12 miles from the Canadian boundary line and 104 miles from Quebec. It is at the junction of four turnpikes or thoroughfares over which large numbers of French Canadians pass on their way to the lumbering country of Maine.

A building was erected for the use of the inspector in the vaccination of immigrants and for the disinfection of baggage. Two men were placed on duty here, one at night to intercept persons passing through with their families and one to assist in the disinfection of baggage.

Fresh vaccine virus was furnished sanitary inspectors once a week, and sulphur, bichloride mercury, alcohol, iron vessels, lanterns, and other articles used in the disinfection of baggage, were supplied inspectors upon requisition.

All stations, except the one at Moose River, were again inspected by me (commencing October 10), and verbal instructions were given to inspectors where it was considered necessary to make the inspection thorough.

The following regulations, issued by the Department, were, upon their receipt, furnished all sanitary inspectors, and were in force until quarantine was raised:*

October 14, I visited Montreal to confer with the health authorities, and to obtain definite information relative to the extent of the epidemic, and what was being done in the province to control it and prevent its spread. The epidemic at this date was reaching its greatest proportion. The death-rate in the city was frightful and many citizens were leaving.

The health authorities, central and municipal, numerous sanitary organizations and relief committees, composed of the chief citizens of Montreal, were working with supreme courage and energy, but the prejudice against vaccination of a large proportion of the French-Canadian population, and an indifference or recklessness as to their exposure to the disease, together with the lack of legal powers on the part of the health authorities to enforce vaccination and isolation, were strong barriers against the speedy control of the epidemic in Montreal and other towns in the province of Quebec.

From the different towns in the province of Quebec persons just recovering from small pox, even before the crusts were fairly off their faces, would be found with bed and baggage aboard some train bound for one of the States.

Great difficulty was experienced by our inspectors in determining with certainty the place of departure of persons or baggage in transit through Montreal bound for the United States. Baggage from the lower part of the province of Quebec bound for the States, as well as from Ontario or the west, would be re checked at Montreal.

The United States custom officers stationed at Montreal were requested to mark on the manifests, baggage rechecked at Montreal and bound for the United States where it started from, and this was done whenever it was possible, to the great assistance of the sanitary inspectors.

* This circular is elsewhere printed in this report.

In conference with Dr. T. S. Covernton, chief medical inspector, provincial board of health of Ontario, residing in Montreal, offer was made by said board to furnish certificates of vaccination and freedom from infection of passengers and baggage to persons leaving Montreal for the United States.

Many intelligent persons availed themselves of this arrangement, and had their baggage, &c., examined or disinfected, when necessary, at their homes before departure.

Sanitary inspectors were instructed by me to accept such certificates when presented by passengers.

An additional sanitary inspector was placed on duty (nominated by the Maine State board of health) on the Grand Trunk Railroad at Island Pond.

At Lowelltown, Me., near Lake Megantic, the terminus of the International Railroad, a station was made for the inspection of persons, immigrants, leaving Quebec and going into the lumbering camps of Northern Maine.

A physician, nominated by the Maine State board of health, was appointed sanitary inspector. A building was erected for the fumigation of baggage, and quite a large number of French lumbermen were vaccinated, and all suspicious baggage fumigated.

Persons applying at the office of the consul-general of the United States for the provinces of Ontario and Quebec were informed what was necessary to avoid detention of themselves and baggage, &c., at the border, and were given certificates at their residence when this was possible.

On October 15 I received at Montreal the following telegraphic order:

"Proceed at once to Albany, confer with State board of health, and organize inspection service.

"HAMILTON,
"*Surgeon-General.*"

I reached Albany October 16, and in conference with Dr. Alfred Ludlow Carroll, secretary of the State board of health of the State of New York, I was requested to station sanitary inspectors at Rouse's Point, Mooers Junction, Ogdensburgh, Oswego, Cape Vincent, Fair Haven, Charlotte, Sodus Point, and Morristown. Other border crossings were considered and the necessity for a few other stations was left with me to decide after investigation.

The protection of the border from Buffalo to Niagara was considered to be under the jurisdiction and supervision of the city of Buffalo, and the expense to be borne by that city, which was the case at that time.

Dr. Carroll was requested to submit names of physicians to act as sanitary inspectors, and the names only of the local health officers were suggested—Dr. Hall, Dr. Dowd, and Dr. Sawyer.

It being necessary for me to visit the different places in the work of organizing inspection stations, those considered most important railroad stations were first established. Two physicians were appointed to inspect all trains over the Grand Trunk Railroad crossing the northern boundary of the State near Mooers Junction, N. Y. A freight car was furnished by the railroad company for the use of inspectors in the fumigation of baggage and freight.

At Ogdensburgh two inspectors were appointed to inspect the ferries crossing the Saint Lawrence River from Prescott bringing passengers from Montreal; also vessels coming up the river from Montreal. A building at the landing was prepared for the fumigation of baggage and freight.

One inspector was appointed at Morristown to inspect the railroad ferries from Brockville and other vessels from Canada landing at this port.

October 19 I received the following telegraphic order:

"Upon completion of inspection at Ogdensburgh, proceed to Buffalo, N. Y., confer with Passed Assistant Surgeon Wheeler and the Buffalo board of health relative to appointment of sanitary inspectors. Not to interfere with plan agreed upon at Albany.

"HAMILTON,
"*Surgeon-General.*"

In a conference with the Buffalo board of health I was informed by Dr. Briggs, president, that the board had been inspecting all trains from Canada over the International bridge at Buffalo; also the trains over the suspension and Cantalever bridges at Niagara, but that they had no more funds to pay for such inspection.

They asked that the inspection of all trains over the above roads be continued by the General Government, and also that an inspector be stationed at Tonawanda. Two inspectors were appointed at Buffalo, one at Tonawanda, and two at Niagara.

Upon my request the supervision of the stations at Buffalo, Tonawanda, Niagara Falls, and Charlotte, N. Y., was placed in the hands of Passed Assistant Surgeon W. A. Wheeler, U. S. Marine-Hospital Service.

A physician to act as sanitary inspector was appointed at each of the following New York ports on Lake Ontario and the Saint Lawrence River besides those heretofore mentioned:

Charlotte, Sodus Point, Fair Haven, Oswego, Cape Vincent, Clayton, Woddington, and Fort Covington, the last three being located on the Saint Lawrence and having ferry crossings. Completing the arrangements at the above places, the principal avenues of immigrant travel to the United States between Buffalo, N. Y., along the northern boundary and the eastern border of Maine were guarded.

All vessels arriving from Canada at the different lake ports were inspected before being permitted to land at the dock, and all ferries were boarded on the Canadian side of the river.

Little of no delay was caused by the inspection, unless objection was made by passengers or crews to being vaccinated.

Steamers, schooners, and other water craft are engaged in carrying lumber from the different towns in Quebec located on the Ottawa and Saint Lawrence Rivers, to the several lake and river ports in Northern New York. The crews of these vessels, as a rule, were vaccinated by our inspectors for the first time. Collectors of customs of the lake and river districts were requested to render all possible assistance through their customs inspectors and other officers to the sanitary inspectors on duty in their districts. In respect to a vessel's compliance with the sanitary regulations could readily be enforced by the collector of customs, simply by informing the master that clearance papers would not be granted without strict conformity by officers and crews to said regulations.

This simple method of facilitating the work of the sanitary inspectors was found effective in each case where resistance was offered.

Owing to the difficulty in obtaining reliable information as to the sanitary condition of baggage leaving Montreal, where there were so many infected dwellings, I issued an order to the sanitary inspectors stationed at Rouse's Point, St. Albans, Richford, Newport, and Island

Pond, to fumigate all Montreal baggage, to accept no certificate of vaccination unless known to be bona fide and the physician granting the same known to the inspector.

This rule, based upon the supposition that every passenger's baggage was infected unless positive proof was offered that such was not the case, was adopted after careful consideration and with full knowledge of what it implied. It was at this time that public opinion was against allowing either persons or baggage from Montreal to enter the States, and numerous letters were pouring in from different State and local boards of health urging the necessity of the most rigid measures against the introduction of the pestilence.

The work of fumigating baggage, household goods, &c., was enormous. Sixty-four pieces of baggage from a single train were detained at Island Pond, the trunks opened and contents hung up in the building, fumigated with sulphurous-acid gas, repacked, rechecked, and sent on to their destination the following day. This work was done during the night as well as the day from necessity, in order to accomplish it, and cause as little delay as possible.

Sanitary inspectors were instructed to open all trunks detained for fumigation, hang up the contents, or lay them loosely upon racks, burn 3 pounds of sulphur to each 1,000 cubic feet of space, and allow the articles to so remain from three to six hours, according to their nature.

In the inspection of passengers, each person was requested to exhibit his (or her) vaccination scar to the sanitary inspector. All persons not recently vaccinated were then vaccinated on the arm by one or more insertions. Although three or four insertions are considered preferable to a single one, to insist on this, on board a railroad train, was not always practicable.

I have good reason to believe that the rule relative to vaccination of passengers was faithfully carried out by all the sanitary inspectors, although stubborn resistance was occasionally offered by a car of immigrants or a few passengers in the parlor cars. Quite a number of immigrants were put off the trains for refusing to be vaccinated and several were arrested for persisting in crossing the boundary line contrary to the regulations.

At many towns in Canada certificates of vaccination were sold by physicians, or persons claiming to be physicians, to persons who had not been vaccinated, to enable them to pass the United States sanitary inspectors without being delayed at the border.

In company with one of the sanitary inspectors over the Grand Trunk Railroad, I found over forty immigrants provided with certificates of vaccination; an examination proved that but seven of them had ever been vaccinated. After we vaccinated the party they informed me that they had purchased their certificates for 25 cents each.

By request of the central board of health of the province of Quebec, fraudulent certificates of vaccination were taken up by the sanitary inspectors and forwarded to their board with a report of the case; this enabled their board to prosecute the physician issuing them. Numerous devices were practiced by immigrant passengers to avoid vaccination, such as feigning sickness, secreting themselves under seats or in the closets, dodging the inspector at railroad stations by going into the car ahead that had been inspected, claiming to have had small-pox, borrowing certificates of vaccination from their friends who had passed over the road and returned, &c.

Dr. Hingston, chairman of the central board of health, informed me that the compulsory vaccination of passengers by the United States

sanitary inspectors along the border was a material aid to their board in carrying out their sanitary regulations in the provinces.

Frequent inspection of the Vermont and the Eastern New York stations were made, and, I believe, the regulations for the maintenance of quarantine inspections along the northern frontier of the United States, were faithfully executed by the sanitary inspectors.

Weekly reports of services performed by sanitary inspectors were received and forwarded to your office, together with such reports and recommendations as I considered necessary on different occasions.

Letters of inquiry from numerous State and local health boards relative to the inspection service were received and answered.

Local health boards were informed of immigrants bound for their localities who were known to have been exposed to the contagion of small-pox.

By request of the General Superintendent of the Railway Mail Service, all mail matter coming from Canada was fumigated at Vanceborough, Me., Island Pond, N. Y., Newport, Vt., Richford, Vt., and Saint Albans, Vt., under the supervision of the sanitary inspectors.

Railway-mail-service clerks were assigned to each sanitary station to guard, to care for, and forward the mail after its disinfection.

Cases of small-pox were discovered by the United States sanitary inspectors among immigrants aboard incoming trains or vessels at or near the following stations:

Mooers Junction, N. Y., one case small-pox stopped and placed in quarantine.

Rouse's Point, N. Y., one case small-pox and one case varioloid were discovered aboard a barge proceeding up the Richelieu River bound for New York City. The vessel was placed in quarantine, the patients were cared for aboard the vessel, and three children belonging to the family on board were cared for in a place apart from the others and at the expense of the Service. After the recovery of the patients the vessel was thoroughly disinfected.

Saint Albans, Vt., three cases of small-pox, not fully recovered, were discovered aboard a train of the Vermont Central Railroad. They were sent back to Montreal.

Richford, Vt., nine cases of small-pox, not fully recovered, were discovered on board trains on the Southeastern Railroad and sent back to the place of their departure.

Newport, Vt., one case of small-pox, not fully recovered, found on board train on Passumpsic Railroad and sent back to place of departure.

The cases that were returned were in different stages of the disease, from the suppurative to the later stages of desquamation.

February 8, 1886, I received an order from you to proceed to Richford, Vt., and investigate reported cases of small-pox and report necessary measures to prevent its spread.

I left Boston on the same date and arrived in Richford the following morning. Considerable alarm existed among the citizens of Richford, but upon investigation there were found to be no cases of small-pox in Vermont, but many were reported at Mansville and Freligsburgh, in Canada, about 9 miles from Richford.

Upon going to Mansville I learned that one person had recently died of small-pox, and that there were five cases in the village; all isolated, and the houses placarded.

Many persons had been exposed on account of a mistaken diagnosis in the first case.

Vaccination of the citizens of the place was general and no active measures were considered necessary.

From Mansville I drove to Freligsburgh, and there found two cases of small-pox, one convalescing and the other at the point of death. Both cases were isolated, the houses placarded, and every person in the place vaccinated.

Arrangements were made to obtain prompt reports of any outbreak that might occur.

Obedient to your order of the 9th of February, I stopped at Hartford, Vt., on my return, to confer with his Excellency Governor Pingree before submitting my report to the department.

A report of my investigation of the cases found near the Vermont border was submitted to him, and it was not considered necessary to renew quarantine measures.

There are a few noteworthy facts in connection with the quarantine measures, besides the great object accomplished thereby, of preventing an epidemic in the United States:

The adoption of sanitary measures and their successful execution in a foreign country, without law or any pretext of authority, except the sufferance of the constituted authorities of that country and the moral support of the people.

Vaccination of passengers and the disinfection of baggage without detention of passengers or trains.

The extensive border guarded for a considerable period of time at small expense.

Although passengers who were vaccinated were not often seen afterwards by the inspector, the following observations were made and reported: Successful vaccination in many persons who had had small-pox were verified by the sanitary inspectors. A case of confluent small-pox of a woman at quarantine, during the last two months of pregnancy, ending in recovery and a natural delivery of a healthy child without marks of small-pox upon its body.

The vaccine virus furnished by the Department was satisfactory and successful in all primary inoculations that could be verified, and no case has been reported where serious result followed vaccination.

So far as I have been able to learn no case of small-pox in the United States was developed from, or was traceable to, baggage that was fumigated at the United States quarantine stations.

It is believed that sulphurous-acid gas effectually destroys the small-pox germ or poison, and that it is the most practical disinfectant for small-pox infected baggage, when it can be properly applied.

From the many thousands of passengers coming to the United States from the infected districts of Canada, very few cases of small-pox developed in the States.

During a small-pox epidemic in a country whose territory is contiguous with another, no manner of quarantine or sanitary measures consistent with freedom of intercourse between the countries can give absolute immunity from the disease.

A passenger apparently in good health may be properly vaccinated, baggage and person disinfected by the sanitary inspector stationed at the border, and a few hours later be taken with confluent small-pox. All that can be expected of any quarantine body or sanitary organization is that they reduce to the minimum the danger of the spread of disease.

A policy of non-intercourse between contiguous countries to prevent the spread of small-pox is unwarranted, impracticable, and, if attempted, would probably give no greater security than proper sanitary measures.

The prevention of small-pox in any country must, to a great extent, rest with the local authorities, as no city or district is in danger at the approach of an epidemic of small-pox, provided all are properly vaccinated.

Vaccination should be made compulsory by State enactment and the rules for its enforcement provided by State boards of health and at the expense of the State, city, or county.

The various railroads crossing the northern border—the Vermont Central, Canada Atlantic, Grand Trunk, Southeastern, and Passumpsic—not only conformed to the sanitary rules of the United States, but have issued specific orders to their employés to assist the sanitary inspectors in the execution of the same.

The success of the quarantine depended largely upon the work of the inspectors, who performed their difficult and disagreeable duties in a manner efficient and creditable.

The following table gives a summary of the work performed at each station:

Summary of work performed.

Sanitary inspectors.	Quarantine stations.	Established.	Abolished.	Persons examined.	Persons vaccinated.	Pieces of baggage disinfected.	Persons detained or sent back for not complying with the regulations.
C. W. Harlow.... } M. L. Young. ... }	Vanceborough			3,727	873	[1] 64	8
J. B. Thornton....	Moose River	Oct. 6	Feb. 20	937	326	[2] 20	2
J. F. Hill	Lowelltown	Nov. 3	Jan. 8	176	171	7	1
J. A. Genereux .. } A. Q. Pottle..... }	Island Pond	Oct. 4	Feb. 28	5,376	1,504	364	2
J. H. Gaines	Newport	Sept. 30	Feb. 28	9,400	2,379	931	[3]
W. R. Prime..... } J. H. Hamilton... }	Richford	Sept. 29	Jan. 25	5,897	1,443	589	[4] 9
S. W. Paige..... } H. P. Hall }	Saint Albans Railroad	Sept. 29	Jan. 25	10,798	1,640	1,277	[5] 9
H. C. Tincham	Rouse's Point Lake	Sept. 30	Jan. 25	2,528	454	333	
S. H. Newton	Rouse's Point	Oct. 1	Dec. 24	1,068	376	[6] 1	[7] 5
F. E. Kendill..... } Conant Sawyer... }	Mooers Junction	Oct. 19	Jan. 25	576	91	50	[8] 14
James Macfie	Fort Covington	Jan. 1	Jan. 25	[9]	[9]		[9]
Silas P. Bower	Waddington	Nov. 5	Dec. 10	82	48	[9]	[9]
T. F. Connally ... } James Morrison. }	Ogdensburgh	Oct. 21	Jan. 25	995	575	185	5
James Garvin	Morristown	Oct. 20	Jan. 25	1,976	527	200	2
S. V. Frame.....	Clayton	Oct. 28	Dec. 10	388	74	2	
H. G. Dawson.... } Thomas Masson.. }	Cape Vince t	Oct. 27	Dec. 10	724	188	7	1
L. Reynolds..... } P. M. Doud }	Oswego	Oct. 26	Dec. 10	1,650	290	[9]	6
A. L. Hall	Fair Haven	Oct. 24	Dec. 10	332	50	[9]	1
F. L. Wilson.....	Sodus Point	Oct. 24	Dec. 10	600	191	[9]	
F. E. McClure	Charlotte	Oct. 23	[10]				
J. W. Hunter	Niagara Falls, Suspension Bridge.	Oct. 21	[10]				
W. R. Campbell....	Niagara Falls, cantalever Bridge.	Oct. 21	[10]				
F. F. Hoyer.....	Tonawanda Lake	Oct. 22	[10]				
J. S. Porter	Buffalo Railroad	Oct. 20	[10]				
J. I. Marchy.....	Buffalo	Oct. 21	[10]				
Total.....				47,230	11,200	4,436	65

[1] 405 mail bags.
[2] 20 persons.
[3] One case small-pox sent back.
[4] Nine cases small-pox sent back.
[5] Three cases small-pox sent back.
[6] Vessel and cargo.
[7] Two cases small-pox placed in quarantine.
[8] One case small-pox placed in quarantine.
[9] No report.
[10] Transferred to other supervision.

In conclusion, I desire to acknowledge the hearty co-operation of the provincial boards of health of Ontario and Quebec, the State boards of health of New York, Massachusetts, and Maine, and the local boards of health of Boston, Mass., Buffalo, N. Y., Burlington, Vt., and Portland, Me.

Valuable assistance was rendered by Collector B. B. Smalley and Dr. A. P. Grinnell, of Burlington, Vt., in the organization of the Service in Vermont.

Very respectfully, your obedient servant,

H. W. AUSTIN,
Surgeon M. H. S.

To the SUPERVISING SURGEON-GENERAL,
U. S. Marine-Hospital Service, Washington, D. C.

REPORT OF SURGEON W. H. LONG.

DETROIT, MICH., *January* 5, 1886.

SIR: I have the honor to make the following report on quarantine on the Michigan frontier for the prevention of the introduction of contagious diseases from Canada.

On taking charge of the United States Marine-Hospital Service at this port, on the 29th of October, 1885, I found that on the 25th of October Surgeon Sawtelle had resumed charge of the quarantine, which had been in continuous existence since organized by him, on the 24th and 25th of August, 1885, but had been in charge of the State authorities from September 18 to October 24, 1885.

Three inspectors were on duty at Detroit and two at Port Huron, Mich. Application was made for an additional inspector at Port Huron, and a visit to that point satisfied me that three inspectors were necessary, and Dr. M. Willson, who had acted for the State Board of Health, was appointed and continued on duty.

The inspection service was well organized and doing efficient work under the rules originally adopted by Surgeon Sawtelle, with such additions as had been dictated by experience.

Early in November it was reported to me that household goods were being shipped from distant points in Canada to stations near the border and reshipped into the United States, to evade the quarantine regulations and disinfection, as such goods coming from known infected localities were so treated. On November the 10th I issued instructions to the inspectors to disinfect all household goods coming from Canada into the United States.

At the suggestion of Governor R. A. Alger, in a letter dated November 3 (copy inclosed), that there was great danger of small-pox being introduced into the lumber camps, I issued instructions to the inspectors to treat all persons from Canada destined for the lumber camps in Michigan or elsewhere as coming from an infected district, and their bags and baggage to be thoroughly disinfected.

On November 6 I addressed a circular letter to the health officers at East Saginaw, Bay City, Tawas, Au Sable, Mackinac, Alpena, and Saint Ignace, the principal headquarters and bases of supplies for the lumber districts, making inquiries as to the routes of travel by which Canadian lumbermen reached the cities mentioned; and if any came by Canadian vessels, would they co-operate with the customs officers in enforcing

quarantine regulations? Replies were received from Bay City, Tawas, Au Sable, and Alpena to the effect that no lumbermen or other passengers were landed from Canadian vessels, and all arrivals were by rail or American vessels, and therefore must pass through the hands of the inspectors at Port Huron or Detroit, and that no other action was deemed necessary.

November 2, I received a letter dated October 30, 1885, from certain citizens of Saint Clair, and on the 4th of November one from the health officer, asking that an inspector be appointed at that place, as Courtwright, on the opposite side of the Saint Clair River, was the terminus of the Canada Southern Railroad, and it was found that passengers who wished to avoid the inspectors at Detroit and Port Huron, would enter the United States at that point.

The secretary of the State board of health also wrote to the Surgeon-General, United States Marine-Hospital Service, and to me, to the same effect. I visited Saint Clair and conferred with the Board of Health, deputy collector of customs, the captain of the ferry-boat, and station agent at Courtwright, and found that, although the whole travel by this branch of the Canada Southern was light and local, the possibility of a diversion by that route existed, and Dr. E. A. Deyoe was appointed inspector on November 13, and my action reported to the Department for approval.

It was reported to me early in November by the inspectors, both at Detroit and Port Huron, that certificates of vaccination from the health officer of the Province of Ontario were frequently found in possession of persons who had not been vaccinated, and others in possession of persons whose names were different from those on the face of the certificates. Prior to this time such certificates had been recognized by the inspectors and passed. The conclusion was arrived at that the parties to whom these certificates had originally been issued, after passing into the United States, had returned them by mail to friends to follow, or, obtaining them on vaccination, sold them. On November 10, inspectors were instructed to take up all such certificates, and, when verified by examination, to issue the official certificates of the service instead. On November 4 a transfer boat, with a passenger train of the Great Western Railroad, left the Grand Trunk slip at Windsor before being inspected and landed at the Wabash dock on this side. Fortunately, the passengers were few and not from an infected district. The fault was traced to the station agent of the Grand Trunk Railroad at Windsor. I at once wrote to him and notified the local railroad authorities that the State and local quarantine laws would be rigidly executed and penalties enforced if the occurrence was repeated. The local health authorities were promptly notified, and they gave notice that boats would not be permitted to land within the city limits until inspected. No trouble was afterwards given.

December 10, I visited Port Huron to inspect the condition of the inspection service at that port, and found twenty bales of rags from Brantford, Ontario, consigned to Cleveland, Ohio. The collector of customs had telephoned me in regard to these rags and I authorized their detention, and now instructed that they were not to be allowed to cross the border.

December 24, I received a Department letter, dated the 21st, 1885, directing me to raise the quarantine on the Michigan frontier on the 31st December, 1885. I at once notified the governor, secretary of the State Board of Health, health officer of Detroit, collectors of customs,

and inspectors of the fact. and January 2, 1886, I notified Governor Alger that the quarantine had been raised according to instructions.

I desire to thank his excellency Governor R. A. Alger for valuable suggestions, readiness at all times to advise; the local health authorities and collectors of customs for their hearty co-operation.

The inspectors have been efficient and industrious, and to the thorough manner with which they have performed their duties, and the aid received from customs officers, the fact is due that not a single case of small-pox has occurred in this State. The railroad companies furnished every facility to expedite the work of the inspectors, including transportation for them and the surgeon in charge. They also furnished box cars for disinfecting purposes, the necessary labor, and at Port Huron the disinfecting material.

The following is a summary of the work done by the inspectors from October 25 to December 31, 1885:

Number of persons inspected	32,465
Number of persons vaccinated	2,236
Number of persons detained	536
Number of persons refused admission for refusal to be vaccinated	14
Number of pieces baggage inspected	2,047
Number of pieces baggage fumigated	1,839
Number of car-loads household goods fumigated	11
Number of packages household goods fumigated	8
Number of chests household goods fumigated	1
Number of boxes household goods fumigated	1
Number of pieces household goods fumigated held	1
Number of lots blankets fumigated	1
Number of car-loads freight fumigated	3
Number of freight bills fumigated	171

The expenses incurred on account of the quarantine service in this State for the period mentioned were as follows:

5 inspectors, 68 days each, at $4 per day	$1,360 00
1 inspector, 65 days, at $4 per day	260 00
1 inspector, 49 days, at $4 per day	196 00
A. Bassett & Co., for disinfecting material (2 bills)	33 79
T. J. Milliken, for disinfecting material	7 05
W. H. Long, traveling expenses	2 90
Total	1,859 74

Very respectfully,

W. H. LONG,
Surgeon M. H. S.

To the SUPERVISING SURGEON GENERAL,
U. S. Marine-Hospital Service, Washington, D. C.

—

DETROIT, MICH., *November* 2, 1885.

SIR: I have the honor to state that I have assumed charge of the national inspection service of the State of Michigan, relieving Surgeon Henry W. Sawtelle.

I will be glad to receive any suggestions you may have to make relative to the matter of the introduction of contagious diseases from Canada, or confer with you at any time you may desire.

Very respectfully,

W. H. LONG,
Surgeon, M. H. S.

To his Excellency R. A. ALGER,
Governor of Michigan.

EXECUTIVE OFFICE, MICHIGAN,
Detroit, Mich., November 3, 1885.

MY DEAR SIR: Your favor of 2d instant, stating that you had assumed control of the national inspection service, relieving Doctor Sawtelle, has just been received. I think Doctor S. has organized the service efficiently, and I am very glad in the change to be assured, as I have been, that the matter has fallen into such efficient hands as yours. I beg to suggest that the great danger outside of our cities seems to be in the way of lumber camps. Men arrive by steamer at Saint Ignace, Alpena, Tawas, Au Sable, Bay City, and Port Huron, going direct to the woods, and it seems to me steps ought to be taken at once to thoroughly overhaul their baggage and bags and fumigate them. We had thought of having our men in camp vaccinated, and have been to the woods to look the matter over. I find a constant stream of them coming and going, and am satisfied the work would be impracticable.

Sincerely, yours,

R. A. ALGER.

Dr. W. H. LONG,
U. S. Marine-Hospital Service, Detroit.

—

DETROIT, MICH., *December* 24, 1885.

SIR: I have the honor to advise you that I am this day in receipt of a Department letter dated Washington, December 21, 1885, signed by Supervising Surgeon-General Marine-Hospital Service, directing me to raise the quarantine and discontinue the inspection service at the several stations on the Michigan frontier on the 31st day of December, 1885.

Very respectfully,

W. H. LONG,
Surgeon, M. H. S.

To his Excellency R. A. ALGER,
Governor of Michigan.

—

EXECUTIVE OFFICE, MICHIGAN,
Detroit, January 22, 1886.

MY DEAR SIR: Your favor of 21st instant, inclosing copy of your official report on the small-pox quarantine matter, has been received, for which please accept my thanks.

I am sure the State of Michigan, as also the great Northwest, is under great obligations to you for the very efficient manner in which you have conducted this charge.

Sincerely, yours,

R. A. ALGER.

Dr. W. H. LONG,
U. S. Marine-Hospital Service, Detroit, Mich.

PASSED ASSISTANT SURGEON WHEELER'S REPORT.

BUFFALO, N. Y., *February* 11, 1886.

SIR: In accordance with your request of January 25, 1885, I have the honor to submit the following report of inspection and quarantine in my district during the fall of 1885:

In October of last year the Buffalo health board appealed to the New York State board of health to maintain an inspection and quarantine against Canada along the Niagara River, in view of the epidemic of small-pox then prevailing at Montreal. The State board of health not having the means to defray this expense, a request was made, through me, by the Buffalo health board, asking the Marine-Hospital Service to establish such inspection. Accordingly an officer of the Marine-Hospital Service was sent to Buffalo to confer with the local health officers and myself in the matter, and it was thought best to appoint six inspectors for this district, which embraces all of the frontier from Buffalo to Charlotte, N. Y. One inspector was appointed October 21, at $5 per day, and stationed at the International Bridge, and on October 22 two inspectors were appointed, each at $5 per day, for the Suspension Bridge, to board all trains and inspect all persons coming from Canada. These inspectors went out a few miles to meet the incoming trains, that there might be no delay at the bridges, and arrangements were made at these points to fumigate all baggage and household goods coming from infected districts. Also two more inspectors were appointed on this day; one for the port of Buffalo, at $7 per day, and one for the port of Tonawanda, at $5 per day, to inspect all vessels coming from Canada to these ports. The inspector at Buffalo was furnished quarters at the life-saving station at the entrance of the harbor, through the courtesy of Capt. D. P. Dobbins, superintendent Life-Saving Service in this district. The captains of tugs towing Canadian vessels into the harbor, were requested by the collector of the port to signal for the inspector when at the breakwater. The inspector was rowed to the vessel by the life-saving crew, and inspected it and examined all on board while coming up the harbor. The inspector at Tonawanda boarded and inspected all vessels before any person was allowed to land. On October 23 one inspector was appointed, at $5 per day, to board and inspect all Canadian vessels entering the port of Charlotte, N. Y. These are the the only points at which people from Canada enter this district. Each inspector was furnished with a copy of Department circular No. 153 for his instructions, and he was required to examine all persons who were not provided with *bona fide* certificates of vaccination. He was also furnished with vaccine points and instructed to vaccinate all those who were unprotected free of charge, and furnish them with a marine hospital certificate of inspection, requiring each person to whom the certificate was issued to write his name upon it, to prevent it being transferred; also to inspect all baggage and household goods from Montreal.

The following is a summary of the work done:

Number of inspectors	6
Number of vessels inspected	148
Number of trains inspected	710
Number of persons examined	9,936
Number of persons vaccinated	3,111
Number of persons excluded from State	2

Very little trouble was experienced by the inspectors in their work. The railroad companies willingly gave every aid in their power, and

the people, as a rule, submitted cheerfully. I may here state that this inspection did not include persons coming from the United States through Canada.

It was necessary to detain one passenger at Suspension Bridge over night, who refused to be vaccinated, but he submitted in the morning and was allowed to proceed. Two persons were required to get off the train at Suspension Bridge and were not allowed to enter the State because they would not submit to an examination, though claiming to be vaccinated. It was found necessary to fumigate but one lot of baggage, which came from the vicinity of Montreal. To prevent people leaving the trains on the Canadian side of the bridges and crossing by ferry or on foot, the customs inspectors were instructed to demand certificates of all persons crossing the ferries or foot-bridges, and refer those persons not having them to the medical inspectors for examination. A number of certificates, suspected to be forgeries, were taken up by the inspectors, the parties holding them examined, and new certificates issued. One Canadian steamer refused to stop for the inspector and proceeded to its wharf in Buffalo; but upon learning the requirements of the law, the captain allowed the inspector to examine the boat and vaccinate the crew.

The various points at which inspectors were stationed were visited by me from time to time, and a weekly report of the work done was sent to Washington. I am well satisfied that the inspectors, without exception, did their work thoroughly and conscientiously.

Very respectfully,

W. A. WHEELER,
Passed Asssitant Surgeon, M. H. S.

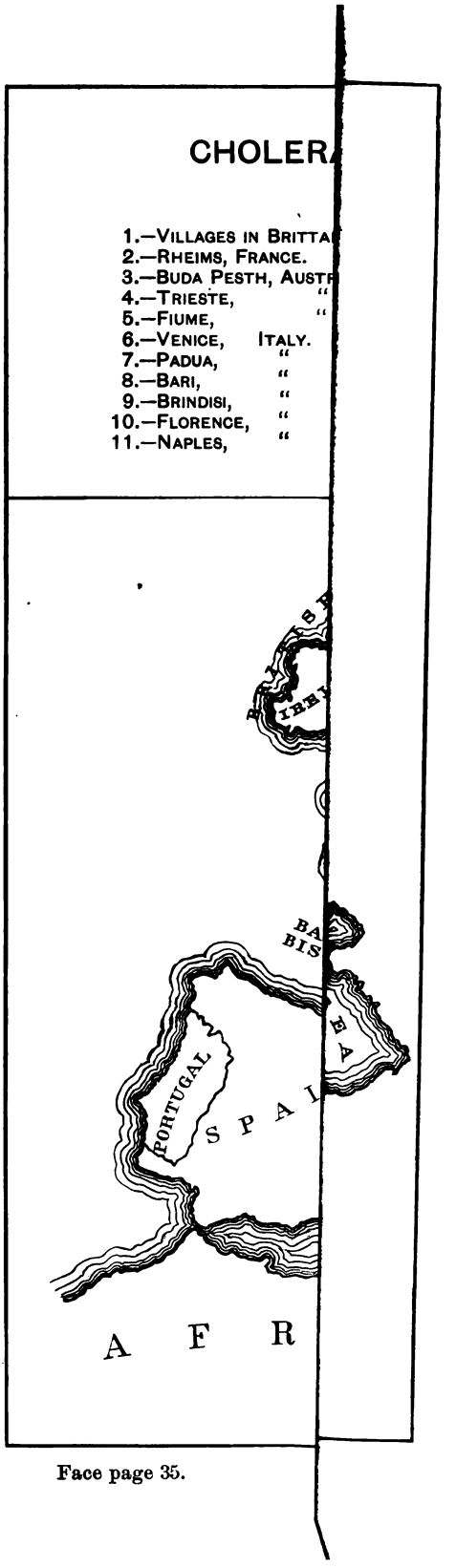
To the SURGEON-GENERAL,
U. S. Marine-Hospital Service, Washington, D. C.

The expenses of this quarantine were considerable, but when the good results are considered, in the prevention of panic and the facility with which commercial intercourse was maintained between Canada and the United States, notwithstanding the existence of this serious epidemic, and the immunity enjoyed by this country, it must be regarded as a very economical expenditure.

The stations at the Delaware Breakwater, Cape Charles, Sapelo Sound, and Ship Island have been maintained during the quarantine season, the station at Ship Island having been kept open throughout the year, and the other stations were closed during the winter and left in charge of a keeper.

The stations at Delaware Breakwater and Cape Charles should, in my judgment, be made permanent stations, and the buildings properly adapted for that purpose.

The Delaware Breakwater quarantine serves as a protection to New Jersey, Delaware, and Pennsylvania, and if proper accommodations for shipping were made it would be of the greatest service. As it has been conducted, however, it is not as efficient as it should be. Machinery for unloading vessels and wharf and warehouses should be built. The hospital buildings are temporary wooden structures on Government reservations. They should be inclosed by a fence and furnished with


CHOLER
1.—Villages in Britta
2.—Rheims, France.
3.—Buda Pesth, Aust
4.—Trieste, "
5.—Fiume, "
6.—Venice, Italy.
7.—Padua, "
8.—Bari, "
9.—Brindisi, "
10.—Florence, "
11.—Naples, "
PORTUGAL
SPAI
A F R

Face page 35.

suitable laundry rooms for disinfection of infected wearing apparel and merchandise.

At Cape Charles the temporary buildings, have been built on Fisherman's Island, a point which was selected by a conference of the health officers of Washington, Baltimore, Norfolk, Portsmouth, and Richmond. There are other towns situated on the Chesapeake and its tributaries which are protected by this quarantine, and as the District and two States are interested, it seems to me proper that the Government should maintain throughout the year a suitable quarantine at this point. The purchase of the island by condemnation is recommended, at a cost not to exceed $5,000, and the erection of a suitable wharf is also recommended. The buildings should be put in thorough repair and provided with all necessary appliances.

The station at Ship Island is in fair condition. An additional supply of water is needed. Another building is needed to serve as a convalescent ward, with rooms for the boatmen and male employés. Two wharves should be built at this station, one about 350 feet and the other about 400 feet long, to serve as a landing for the medical officer, and one for the lazaretto. These wharves can be constructed with piling, and the ballast from the ships, which will cost nothing to the Government, can be used to fill in around them, and thus a solid structure can be erected at a minimum cost. A boat-house for the small boat is needed at all three of these stations, and the same remarks as to the use of ballast in the building of the wharves are applicable at each station. Four States are interested in the maintenance of Ship Island quarantine. The island is the property of the Government, but there has recently been much complaint against its being selected for a quarantine station, owing to the proximity of the summer resorts on the Mississippi coast. In my report for 1883 the dangers of this station were fully pointed out, and one of the Chandeleurs, or the Grand Gozier Island, was recommended as a more suitable site. Recently the Pass a l'Outre has been proposed, which I think would be a good place for the quarantine, provided the channel could be deepened over the bar.

Cholera in Europe.

The accompanying map is intended to show the localities in Europe which were affected by cholera during the past year. In addition to the places shown on the map, cholera was reported at the following named towns and villages in Italy during the same period: Ostuni, Tricase, Piedmont, Cuneo, Verona, Bologna, Arcola, Taranto, Porto Maggiore, Apulia, Oria, Rossano Venosa, Lonigo, Ravenna, Mantua, San Donato, Largo Santo, Piere di Cento, Torli, Erchie, Fianona, Carazere, Cucca, Chioggia, Monte' Celluna, Piazzola, Tagliamento, Aquaviva, San Marco, Ruov di Puglia, Orio, Messafiscaglio, Cittadella, Arzignano, Pescantina, Castelfranco, Valpazo, San Michele, Barletta, Bisceglia, Ceregnola, Corregioli.

The cholera in Spain in 1885.

La Gazeta publishes (April 7th to May 1st) the statistics of the idemic which prevailed in Spain last year. In all, 335,986 cases recorded; of these, 119,493 died. The provinces in which most c occurred are in alphabetical order:

Cities.	Population.	Cases.	Dea
Albacete	130, 921	8, 236	
Alicante	311, 425	13, 977	
Almeria	242, 213	9, 660	
Barcelona	541, 211	6, 302	
Castellon	214, 656	16, 753	
Cuenca	136, 649	10, 003	
Granada	364, 568	24, 736	
Madrid	477, 712	8, 584	
Murcia	420, 229	17, 749	
Navarra	171, 626	12, 895	
Tarragona	196, 448	8, 740	
Teruel	171, 312	21, 909	
Toledo	170, 857	10, 308	
Valencia	630, 321	45, 515	
Velledolia	157, 019	7, 578	
Zaragoza	348, 361	54, 943	

The foreign-inspection service has been maintained this year, as last, through the danger of the importation of cholera. The inspe has been retained at the port of Havana, and all ships bound th for the United States have been inspected by him. I submit herev a detailed statement of the expenses of the quarantine service du the year:

Epidemic fund, from July 1, 1885, *to June* 30, 1886.

Consolidated account from July 1, 1885, to June 30, 1886, as per disbursements:

Through George A. Bartlett	$57, 8
Foreign inspectors (through State Department)	15, 3
Total	73, 2

By stations, from July 1, 1885, to June 30, 1886:

Cape Charles	14, 6
Delaware Breakwater	5, 3
Inspector at Havana	3, 2
Sapelo Sound	7, 2
Ship Island	8, 4
Canadian frontier quarantine	17, 6
Miscellaneous	1, 3

There is a balance to the credit of the fund "for preventing spread of epidemic diseases," October 1, 1886, $252,850.74. No propriation was asked for the current fiscal year, nor will any be nee for the ensuing fiscal year, unless an epidemic should break out, ex for the specific purposes mentioned. The experience acquired by Bureau in quarantine service since the passage of the act of April 1878, has been sufficient to entitle it to form an opinion regarding requirements of this service, if it is to be managed in the highest s

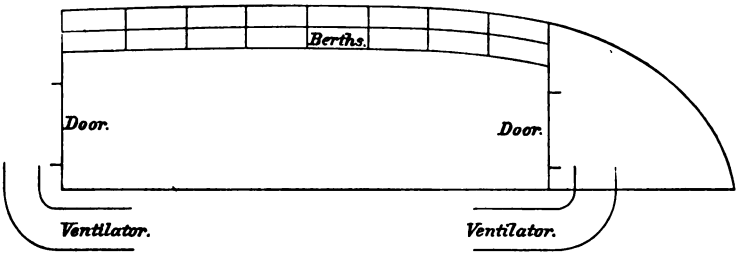
of efficiency. Therefore, I have the honor to recommend that the establishments at Cape Charles, Delaware Breakwater, and Ship Island or some other station in the Gulf be made permanent quarantine stations, and that, in addition to the hospital buildings, they be equipped with all the necessary appliances known to modern sanitary science for the treatment of infected vessels and their cargoes, so that not only may immunity from the importation of contagious diseases be secured at those stations, but such security be had with the least possible obstruction to commerce.

The inspection of emigrants in foreign ports bound for the United States is a recognized necessity when fatal epidemics, such as cholera, are prevailing on the continent of Europe. It is not recommended, however, that this service should be made a permanent service, believing that with the general advancement of sanitary knowledge among nations, epidemics are yearly becoming more rare and under control in the countries where they seem to originate. It is better to leave the employment of inspectors abroad, as at present, to discretion, so that in times of epidemic they can be employed when necessary, and their services terminated with the necessity.

With the matter of inspection of emigrants comes into view the question of the hygienic condition of the ship in which they are brought, and the necessity for a rigid sanitary inspection, as well as the general inspection now authorized by law, has been apparent to medical officers of this service and State quarantine officers for many years.

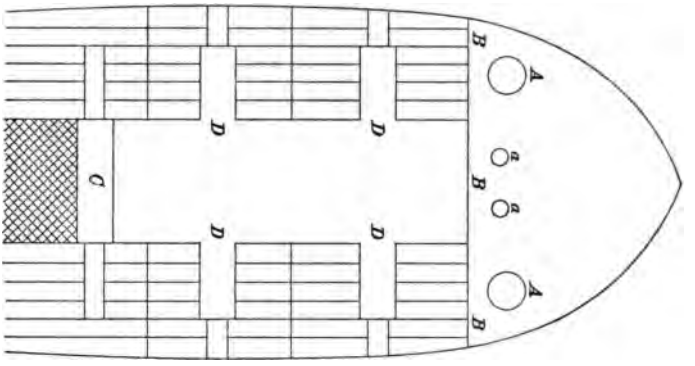
The following condition of affairs was found by one of our inspectors, which is transcribed from his notes:

On board the ventilation down below was thus:



They said that they "never had both doors shut"; but if such a thing happened the people inside would be absolutely stifled.

The inspection of another vessel showed:



Between decks are passages D, on each side of which are berths, the whole accommodating eighty people. Formerly there were metal windsails at A and smaller ones at A_1, and there is still a hatchway at C, partially covered by a folding shutter, and then with a grating. The owners have now filled the space up with cargo and constructed a bulkhead at B, entirely shutting off all ventilation at A*a*.

A more stringent law should be made regarding hospital and other accommodations of the steerage on merchant passenger ships. Not only are the berth-decks badly ventilated, but in many cases there is an absence of light. The following dialogue took place in the steerage during a day inspection, as reported by the inspector:

Ship officer. "You must not strike a light there."

Female passenger. "Please, sir, I'm looking for my child."

Such a condition of things should not be tolerated on board ships engaged in the carrying trade between two of the nations claiming to represent a high type of modern civilization. The medical officers on board of these ships are usually not subject to any examination as to their qualifications, the cabin passengers, as well as those in the steerage, being obliged to accept them on trust.

That portion of the quarantine act requiring the publication of weekly abstracts of sanitary reports, &c., has not been carried into effect of late years, the force of this office being inadequate for the performance of the duty. The detail of an additional officer to act as registrar of vital statistics would fulfill the requirements, at a minimum expense. The cost of this has been included in the estimates. These reports are very much sought after by State and local boards of health, and were the publications resumed it would be of great service to them.

The recommendation for the establishment of a quarantine on the Pacific coast in the bay of San Francisco is respectfully renewed, as there is no adequate quarantine at this port. A suitable site has been selected on a portion of the Government reservation at Angel Island, by a board consisting of one medical officer each of the Army, Navy, and Marine-Hospital Service, and, if authorized to do so, a hospital could speedily be erected and put in operation.

If the recommendations here made are granted, the sanitary defenses of the United States will be in much better condition than ever before, and, when taken in conjunction with the efficient municipal quarantines in operation at many of the ports, and the municipal hygienic work carried on by State and local sanitary authorities, constitute a defense well nigh impregnable, so far as the importation of disease is concerned and the spread of epidemics.

NATIONAL SNUG HARBOR.

The annual reports heretofore have mentioned the necessity for making provision for old, decrepit, and worn-out seamen, and those suffering from incurable affections. This provision, if enacted, will prevent the over-loading of the hospitals to some extent, and concentrate these seamen in one place, where they could be better cared for. The former class, that is those who have become superannuated, not being subject to the local poor laws and not requiring relief in hospital, suffer great hardship for want of proper attention. In many instances an old seaman who has grown gray in sea-service has no home or place where he can be cared for at public expense.

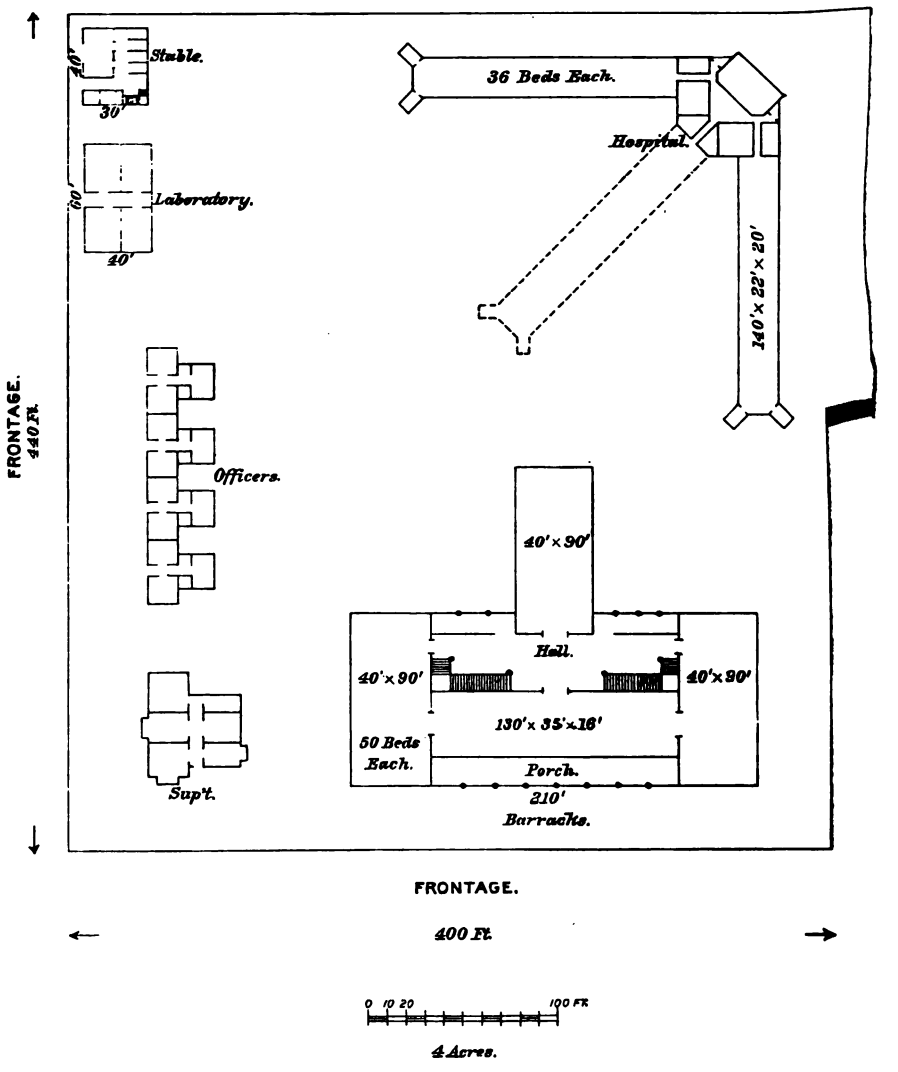
The recommendations, therefore, for the establishment of a national snug harbor are respectfully renewed. If established in the District of Columbia it could also serve as the general headquarters of the Bureau and at the same time of the purveying division, laboratory, &c. In relation to this matter the Annual Report for 1881, pages 181–185, is referred to. No estimate is submitted with this report, as there is no authority of law for the contraction of an expenditure, but a sketch plan of the necessary buildings suitable for the purpose, with a minimum amount of land, is submitted.

Approximated estimate of cost of buildings for barracks, superintendent's house, officers' quarters, laboratory, hospital, and stable.

OFFICE OF SUPERVISING ARCHITECT,
TREASURY DEPARTMENT,
Washington, D. C., February 23, 1882.

Barracks: Brick building, 3 stories high, 504,800 cubic feet	$75,720 00
Superintendent's house: Brick, 2 stories and attic, 12 rooms, 87,500 cubic feet	13,125 00
Officers' quarters: Brick, 4 houses and back building in block, 2 stories, 6 rooms each, 80,600 cubic feet	12,090 00
Laboratory: Brick, 2 stories, 60,000 cubic feet	9,000 00
Hospital: Framed of wood, 3 wings, 1 story high, with surgeons' quarters, 247,300 cubic feet	29,676 00
Stable: Brick, 1 story, with loft for hay, &c., 24,000 cubic feet	3,600 00
Contingencies	14,321 10
Total	157,532 10

(Say, $150,000.)



CONTRACTS FOR THE CARE OF SEAMEN.

The following contracts for the care of seamen entitled to relief from this Service for the fiscal year ending June 30, 1887, were made. The right was reserved by the Secretary of the Treasury to terminate any contract whenever the interests of the Service required it:

Albany, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; the Albany Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day.

Alexandria, Va.—The medical attendance to be furnished by an acting assistant surgeon.

Apalachicola, Fla.—Dr. J. D. Rush to furnish medical attendance and medicines, at $40 per month; Martha Campbell to furnish quarters, subsistence, and nursing, at $1 per day, and to provide for the burial of deceased patients, at $12.50 each.

Ashtabula, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. Henry Whelply to furnish quarters, subsistence, and nursing, at $1 per day; contagious diseases, $1.50 per day. Patients requiring long-continued treatment will be furnished transportation to Cincinnati, Ohio; Clover & Tyler to provide for the burial of deceased patients, at $14 each.

Astoria, Oreg.—Saint Mary's Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day.

Baltimare, Md.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; Saint Joseph's Hospital to furnish quarters, subsistence, nursing, and medicines, at 70 cents per day, until the United States Marine Hospital is completed; George Rinehart to provide for the burial of deceased patients, at $7 each.

Bangor, Me.—The medical attendance to be furnished by an acting assistant surgeon; A. S. Mansell to furnish quarters, subsistence, and nursing, at $1 per day; Abel Hunt to provide for burial of deceased patients, at $12 each.

Barnstable, Mass., and subports.—Medical attendance and medicines to be furnished at South Dennis, by Dr. George N. Munsell, at $50 per month; at Hyannis, by Dr. Samuel Pitcher, at $60 per month; at Provincetown, by Dr. W. S. Birge, at $9.50 per month; at Barnstable, by Dr. G. W. Kelly, at $12.50 per month; at Wellfleet, by Dr. William N. Stone, at $12.50 per month; at Chatham, by Dr. B. D. Gifford, at $12.50 per month. Seamen applying for relief at Wood's Holl will be sent to the Marine Hospital at Vineyard Haven.

Bath, Me.—The medical attendance to be furnished by an acting assistant surgeon; John M. Soiett to furnish quarters, subsistence, nursing, and medicines, at $1 per day; John M. Clark to provide for the burial of deceased patients, at $14 each. Cases requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Portland, Me.

Belfast, Me.—The medical attendance to be furnished by an acting assistant surgeon; John Doloff to furnish quarters, subsistence, and nursing, at $1 per day.

Bismarck, Dak.—The medical attendance to be furnished by an acting assistant surgeon; quarters, subsistence, and nursing to be furnished by Sister Alexia Kerst, at 90 cents per day.

Boston, Mass.—Patients cared for in the United States Marine Hospital at Chelsea, Mass.; burial of deceased patients at the hospital cemetery; burial of foreign patients, $10 each.

Bridgeport, Conn.—Quarters, subsistence, nursing, medical attendance, and medicines to be furnished by Dr. George F. Lewis, at $1 per day.

Buffalo, N. Y.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; out-patients to be treated at the Marine-Hospital Office, No. 353 Main street; the Buffalo Hospital (Sisters of Charity) to furnish quarters, subsistence, nursing, and medicines, at 64 cents per day, and to provide for the burial of deceased patients, at $6 each.

Burlington, Iowa.—The Saint Francis Hospital to furnish quarters, subsistence, medical attendance, nursing, and medicines, at 90 cents per day.

Burlington, Vt.—The Mary Fletcher Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day.

Cairo, Ill.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; the Sisters of the Holy Cross to furnish quarters, subsistence, nursing, and medicines, at 85 cents per day, in the United States Marine Hospital, and to provide for the burial of deceased patients, at $10 each. For contagious cases $2 per day will be allowed.

Cedar Keys, Fla.—Dr. C. E. French to furnish medical attendance and medicines, at $20 per month; John H. Sutton to furnish quarters, subsistence, and nursing, at $1 per day.

Charleston, S. C.—The medical attendance to be furnished by a medical officer of the

Marine-Hospital Service; St. Xavier's Infirmary to furnish quarters, subsistence, nursing, and medicines, at 95 cents per day; contagious cases, $1.50 per day; and to provide for the burial of deceased patients, at $6 each. Seamen requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Wilmington, N. C.; out-patients to be treated at the dispensary (post-office building).

Chattanooga, Tenn.—The medical attendance to be furnished by an acting assistant surgeon; the mayor of the city, for the City Hospital, to furnish quarters, subsistence, and nursing, at 65 cents per day; contagious cases, $1.30 per day. Jerry Long to provide for the burial of deceased patients, at $6 each.

Chicago, Ill.—Patients cared for in the United States Marine Hospital; J. A. Linn to provide for the burial of deceased patients, at $19 each.

Cincinnati, Ohio.—Patients cared for in the United States Marine Hospital; dispensary at the hospital, southeast corner Third and Kilgour streets; J. J. Sullivan & Co. to provide for the burial of deceased patients, at $12 each.

Cleveland, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; the "Cleveland City Hospital Association" to furnish quarters, subsistence, nursing, and medicines, in the United States Marine Hospital, under lease of September 21, 1875, at 64 cents per day. The hospital to be kept in repair by the association.

Corpus Christi, Tex.—The medical attendance to be furnished by an acting assistant surgeon.

Crisfield, Md.—The medical attendance to be furnished by an acting assistant surgeon; quarters, subsistence, and nursing to be furnished by John Wilson, at 50 cents per day. Cases requiring long-continued treatment will be furnished transportation to Baltimore, Md.

Detroit, Mich.—Patients cared for in the United States Marine Hospital; out-patients at the dispensary, room 16, Campau building; E. H. Patterson to provide for the burial of deceased patients, at $8 each.

Dubuque, Iowa.—The medical attendance to be furnished by an acting assistant surgeon; Saint Joseph's Mercy Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; Henry Herancourt to provide for the burial of deceased patients, at $16 each.

Duluth, Minn.—The medical attendance to be furnished by an acting assistant surgeon; Saint Luke's Hospital to furnish quarters, subsistence, and nursing, at $1 per day; Randall, Kendall & Co. to provide for the burial of deceased patients, at $13 each.

Eastport, Me.—Hospital relief to be furnished on the recommendation of the collector of customs.

East Saginaw, Mich.—The medical attendance to be furnished by an acting asssistant surgeon; Saint Mary's Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day. Patients requiring long-continued treatment to be furnished transportation to the United States Marine Hospital, Detroit, Mich.

Edenton, N. C.—Cases requiring long-continued treatment will be furnished transportation to the United Stated Marine Hospital at Wilmington, N. C.

Edgartown, Mass.—Patients cared for in the United States Marine Hospital at Vineyard Haven.

Elizabeth City, N. C.—The medical attendance to be furnished by an acting assistant surgeon; Parmelia Johnson to furnish quarters, subsistence, and nusring, at 60 cents per day, and James McMauraine to furnish similar service at the same rate.

Ellsworth, Me.—The medical attendance to be furnished by an acting assistant surgeon. Emergency cases only will be furnished continuous hospital treatment; all other cases requiring hospital treatment will be furnished transportation to the United States Marine Hospital at Portland, Me.

Erie, Pa.—The medical attendance to be furnished by an acting assistant surgeon; Hamot Hospital to furnish quarters, subsistence, and nursing, at 71 cents per day;

Riblet Bros. to provide for the burial of deceased patients, at $25 each. Cases requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Detroit, Mich.

Escanaba, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Delta County Hospital to furnish quarters, subsistence, and nursing, at $1 per day; James Bacon to provide for the burial of deceased patients, at $15 each.

Eureka, Cal.—The medical attendance to be furnished by an acting assistant surgeon; James Gill to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day, and to provide for the burial of deceased patients, at $20 each. For contagious cases $3 per pay will be allowed.

Evansville, Ind.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; the Evansville City Hospital Association to furnish quarters, subsistence, nursing, and medicines, at 60 cents per day; Robert Smith to provide for the burial of deceased patients, at $12 each. For contagious cases $3 per day will be allowed.

Fernandina, Fla.—The medical attendance to be furnished by an acting assistant surgeon; John S. Clark to furnish quarters, subsistence, and nursing, at $1.25 per day, and to provide for the burial of deceased patients, at $20 each.

Fredericksburg, Va.—The medical attendance to be furnished by an acting assistant surgeon; Mary G. Herndon to furnish quarters, subsistence, nursing, and medicines, at $1 per day.

Gallipolis, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. M. J. Thomasson to furnish quarters, subsistence, and nursing, at $1.50 per day; Haywood & Son to provide for the burial of deceased seamen, at $14 each.

Galveston, Tex.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; St. Mary's Infirmary to furnish quarters, subsistence, nursing, and medicines, at per day, and to provide for the burial of deceased patients at $7.50 each. Cases requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at New Orleans, at the discretion of the medical officer.

Georgetown, D. C.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; out-patients to be treated at 1421 G street, N. W., Washington; Providence Hospital, Washington, to furnish quarters, subsistence, nursing, and medicines, at 75 cents per day.

Georgetown, S. C.—The medical attendance to be furnished by an acting assistant surgeon; quarters, subsistence, and nursing to be furnished by M. S. Mustard and by Susan Dennison, at $1.50 per day.

Grand Haven, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Nancy Palmer to furnish quarters, subsistence, and nursing, at $1 per day.

Indianola, Tex.—The medical attendance to be furnished by an acting assistant surgeon; quarters, subsistence, and nursing to be furnished by Carrie Bell, at $1.40 per day.

Jacksonville, Fla.—The medical attendance to be furnished by an acting assistant surgeon; Jane Cheney to furnish quarters, subsistence, and nursing, at $1 per day; contagious cases, $2 per day; burials of deceased patients, $10 each.

Key West, Fla.—Patients cared for in the United States Marine Hospital; Williams & Warren to provide for the burial of deceased patients, at $15 each.

La Crosse, Wis.—The medical attendance to be furnished by an acting assistant surgeon; St. Rosa de Viterbos Convent of the Franciscan Sisters to furnish quarters, subsistence, nursing, and medicines, at $1 per day; Tillman Bros. to provide for the burial of deceased patients, at $15 each.

Little Rock, Ark.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. M. Turkis to furnish quarters, subsistence, and nursing, at 66⅔ cents per day; C. M. McNeil to provide for the burial of deceased patients, at $9 each; J. E. Gibson to furnish medicines, at 25 cents for each prescription.

Louisville, Ky.—Patients cared for in the United States Marine Hospital; out-patients, at the dispensary, "Buchanan Building;" David Ruhl to provide for the burial of deceased patients, at $7.50 each.

Ludington, Mich.—The medical attendance to be furnished by an acting assistant surgeon; William H. Phillips to furnish quarters, subsistence, and nursing, at $1 per day.

Machias, Me.—The medical attendance to be furnished by an acting assistant surgeon; Amos Boynton to furnish quarters, subsistence, and nursing, at 71¾ cents per day; E. M. Bucknam & Co. to provide for the burial of deceased patients at $12 each.

Manistee, Mich.—The medical attendance to be furnished by an acting assistant surgeon; board and nursing to be furnished on the recommendation of the collector of customs.

Marquette, Mich.—The medical attendance to be furnished by an acting assistant surgeon; James Freeman to furnish quarters, subsistence, and nursing, at $1 per day, and for contagious cases, $4 per day; and to provide for burial of deceased patients, at $15 each.

Memphis, Tenn.—Patients cared for in the United States Marine Hospital; John Walsh to provide for the burial of deceased patients, at $7.50 each.

Middletown, Conn.—The Hartford Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day; G. W. Wooley & Son to provide for the burial of deceased patients at $13 each. For contagious cases $20 per week will be allowed.

Milwaukee, Wis.—The medical attendance to be furnished by an acting assistant surgeon; out-patients to be treated at No. 159 Wisconsin street; St. Mary's Hospital to furnish quarters, subsistence, nursing, and medicines, at 80 cents per day; Math. Franzen to provide for the burial of deceased patients, at $18 each. Chronic hospital cases to be furnished transportation to the United States Marine Hospital at Chicago, Ill.

Mobile, Ala.—Patients cared for in the United States Marine Hospital; Peter F. Alba to provide for the burial of deceased patients, at $10 each.

Nashville, Tenn.—The medical attendance to be furnished by an acting assistant surgeon; Frank Hollowell, M. D., to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day; contagious cases, $2 per day, and to provide for the burial of deceased patients at $6 each.

New Bedford, Mass.—The medical attendance to be furnished by an acting assistant surgeon; seamen applying for hospital relief who are able to bear transportation will be sent to the United States Marine Hospital at Vineyard Haven.

New Berne, N. C.—The medical attendance to be furnished by an acting assistant surgeon; cases requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Wilmington, N. C.; E. Piver and wife, Rebecca, to furnish quarters, subsistence, and nursing, at 90 cents per day; Moses T. Bryan to provide for the burial of deceased patients, at $8.50 each.

New Haven, Conn.—The medical attendance to be furnished by an acting assistant surgeon; the New Haven General Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; contagious cases, $3 per day; and to provide for the burial of deceased patients, at $15 each.

New London, Conn.—The medical attendance to be furnished by an acting assistant surgeon; quarters, subsistence, and nursing to be furnished on the recommendation of the collector of customs, at a rate not exceeding 86 cents per day. Cases requiring long-continued treatment will be furnished transportation to the Marine Hospital at Stapleton, Staten Island, New York. Hammond & Caulkins to provide for the burial of deceased patients, at $10 each.

New Orleans, La.—Patients cared for in the United States Marine Hospital; Thomas McMahon to provide for the burial of deceased patients, at $9.50 each.

Newport, Ark.—The medical attendance to be furnished by an acting assistant surgeon; Puss Watkins to furnish quarters, subsistence, and nursing, at $1.50 per day.

Newport, R. I.—The medical attendance to be furnished by an acting assistant surgeon; the Newport Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; Michael Cottrell to provide for the burial of deceased patients, at $11.50 each. Cases requiring long-continued treatment will be furnished transportation to the Marine Hospital, Stapleton, Staten Island, New York.

New York, N. Y.—Patients cared for in the Marine Hospital, Stapleton, Staten Island, New York; out-patients to be treated at the dispensary near the "New Barge Office, Battery;" George F. Schafer, of Staten Island, to provide for the burial of deceased patients, at $8 each.

Norfolk, Va.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; Sister Isadore Kenney to furnish quarters, subsistence, nursing, and medicines at $1 per day; J. E. Edwards to provide for the burial of deceased patients at $8.75 each.

Ogdensburgh, N. Y.—The Ogdensburgh Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines at $1 per day; contagious cases, $2 per day; and to provide for the burial of deceased patients at $15 each.

Oswego, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; the Oswego Hospital to furnish quarters, subsistence, nursing, and medicines at $1 per day.

Pascagoula, Miss.—Patients requiring hospital treatment to be furnished transportation to the United States Marine Hospital at Mobile.

Pensacola, Fla.—The medical attendance to be furnished by an acting assistant surgeon; R. W. Hargis to furnish quarters, subsistence, nursing, and medicines at $1 per day; S. B. Hutchinson to provide for the burial of deceased patients at $15 each. Cases requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Mobile, Ala.

Philadelphia, Pa.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; the German Hospital to furnish quarters, subsistence, nursing, and medicines at 70 cents per day, and to provide for the burial of deceased patients at $10 each. Transportation from the Marine-Hospital Office to the hospital to be furnished by the hospital authorities when required. Care and treatment of contagious cases to be furnished by the Philadelphia board of health at $1 per day.

Pittsburgh, Pa.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; out-patients to be treated at No. 96 Wood street; the Mercy Hospital to furnish quarters, subsistence, nursing, and medicines at 94 cents per day; John Burns to provide for the burial of deceased patients at $13 each.

Port Huron, Mich.—The medical attendance to be furnished by an acting assistant surgeon; "Hospital and Home" to furnish quarters, subsistence, and nursing at $1 per day; contagious cases at $3 per day. Patients requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Detroit; Thompson Bros. to provide for burial of deceased patients at $8.50 each.

Portland, Me.—Patients cared for in the United States Marine Hospital; Ilsley Bros. to provide for the burial of deceased patients at $6.50 each.

Portland, Oreg.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; St. Vincent's Hospital to furnish quarters, subsistence, nursing, and medicines at 60 cents per day, and to provide for the burial of deceased patients at $15 each. Out-patients to be treated at the dispensary, Room 21, Union Block, corner of First and Stark streets.

Port Townsend, Wash.—Patients cared for in the United States Marine Hospital; John Hackwell to provide for the burial of deceased patients at $12 each.

Providence, R. I.—The Rhode Island Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines at $1 per day, and to provide for the burial of deceased patients at $12 each. Patients requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Chelsea (port of Boston).

Richmond, Va.—The medical attendance to be furnished by an acting assistant surgeon; out-patients to be treated at the Marine-Hospital Office, No. 20 North Ninth street; "Retreat for the Sick" Hospital to furnish quarters, subsistence, nursing, and medicines at 90 cents per day.

Sag Harbor, N. Y.—Dr. A. F. Schiller to furnish quarters, subsistence, nursing, medical attendance, and medicines at $2.80 per day. Only such patients will be furnished hospital treatment at Sag Harbor as are unable to bear transportation to the Marine Hospital at Stapleton, Staten Island, N. Y.

St. Louis, Mo.—Patients cared for in the United States Marine Hospital; Jacob Michel to provide for the burial of deceased patients at $10.50 each.

St. Paul, Minn.—The medical attendance to be furnished by an acting assistant surgeon; St. Joseph's Hospital to furnish quarters, subsistence, nursing, and medicines at $1 per day; contagious cases at $2.50 per day; and to provide for the burial of deceased patients at $15 each.

Salem, Mass.—The Salem Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines at $2.50 per day, to patients unable to bear transportation to the United States Marine Hospital at Chelsea (port of Boston).

San Diego, Cal.—Dr. W. A. Winder to furnish quarters, subsistence, nursing, medical attendance, and medicines at $1.75 per day; contagious cases $5 per day.

San Francisco, Cal.—Patients cared for in the United States Marine Hospital. Burial of deceased patients at the hospital cemetery; burial of foreign seamen, $10 each; out-patients to be treated at the Marine-Hospital Office, Rooms 1-3, Appraiser's Building.

Sault Ste. Marie, Mich.—The medical attendance to be furnished by an acting assistant surgeon; William H. Smith to furnish quarters, subsistence, and nursing at $1.25 per day; N. V. Gabriel to provide for the burial of deceased patients at $15 each.

Savannah, Ga.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; the St. Joseph's Infirmary to furnish quarters, subsistence, nursing, and medicines at $1 per day. Patients requiring long-continued treatment will be furnished transportation to the United States Marine Hospital at Wilmington, N. C.; Joseph Goette to provide for the burial of deceased patients at $10 each.

Shreveport, La.—Out-patients to be treated at the Marine-Hospital Office by an acting assistant surgeon; T. J. & J. W. Allen to furnish quarters, subsistence, nursing, and medicines at $1.50 per day; W. W. Waring to provide for the burial of deceased patients at $14 each.

Sitka, Alaska.—The medical attendance to be furnished by an acting assistant surgeon.

Tacoma, Wash.—"Fannie C. Paddock Memorial Hospital" to furnish quarters, subsistence, nursing, medical attendance, and medicines at $1 per day.

Tappahannock, Va.—Dr. W. G. Jeffries to furnish quarters, subsistence, nursing, medical attendance, and medicines at Tappahannock, and Dr. W. S. Christian at Urbana, at $1.50 per day.

Toledo, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; the St. Vincent Hospital to furnish quarters, subsistence, nursing, and medicines at 80 cents per day, and to provide for the burial of deceased patients at $10 each. For contagious cases $2 per day will be allowed.

Tuckerton, N. J.—The medical attendance to be furnished by an acting assistant surgeon; Elizabeth Jones to furnish quarters, subsistence, and nursing at $1 per day.

Vicksburg, Miss.—The medical attendance to be furnished by an acting assistant surgeon; the Vicksburg City Hospital to furnish quarters, subsistence, nursing, and medicines at $1 per day.

Vineyard Haven, Mass.—Patients cared for in the United States Marine Hospital; M. C. Vincent to provide for the burial of deceased patients at $12.50 each; Norton

Bros. to furnish transportation to or from the harbor, or Cottage City, at 24 cents for each seaman.

Waldoboro', Me.—At Rockland the medical attendance to be furnished by an acting assistant surgeon; and Mary H. Raulett to furnish quarters, subsistence, and nursing at $1 per day. Cases requiring long-continued treatment to be furnished transportation to the United States Marine Hospital at Portland, Me.

Wheeling, W. Va.—The medical attendance to be furnished by an acting assistant surgeon; Friend & Son to provide for the burial of deceased patients at $13 each; the Wheeling Hospital to furnish quarters, subsistence, and nursing at 80 cents per day.

Wilmington, N. C.—Patients cared for in the United States Marine Hospital; John S. Gibson to provide for the burial of deceased patients at $10 each.

Wiscasset, Me., and subports.—Emergency cases only will be furnished continuous hospital treatment; all other cases requiring hospital treatment will be furnished transportation to the United States Marine Hospital at Portland, Me.

NOTE.—At all ports not otherwise specified the dispensary is located at the custom-house or marine hospital. The rate at ports not specifically provided for by this circular will in each special case be fixed by the Department, upon the recommendation of the proper officer, in accordance with the regulations of 1885.

The rate of charge for seamen from vessels of the Navy, Light-House Service, Coast Survey, Engineer Corps of the Army, and Mississippi River Commission, admitted to hospital under the provisions of paragraph 215, Revised Regulations, and for foreign seamen admitted under the act of March 3, 1875, is hereby fixed at the uniform rate of $1 per diem at ports where there are marine hospitals, and at contract rates at other ports.

I am, sir, very respectfully, your obedient servant,

JOHN B. HAMILTON,

Supervising Surgeon General U. S. Marine Hospital Service.

The Hon. DANIEL MANNING,

Secretary of the Treasury.

STATISTICS

UNITED STATES MARINE-HOSPITAL SERVICE.

6992 M H——4

Statement of expenditures from the appropriation for "Repairs and Preservation of Public Buildings," prepared by the Supervising Architect.

Cairo, Ill	$1,236 99
Chelsea, Mass	366 42
Chicago, Ill	10,786 26
Cincinnati, Ohio	425 80
Detroit, Mich	638 11
Key West, Fla	61 85
Louisville, Ky	175 15
Memphis, Tenn	17 00
Mobile, Ala	84 70
New Orleans, La	4,451 53
Port Townsend, Wash	96 74
Portland, Me	1,323 70
St. Louis, Mo	746 95
San Francisco, Cal	164 95
Vineyard Haven, Mass	817 32
Wilmington, N. C	12 27

Amounts paid from appropriation for "heating apparatus for public buildings," on account of heating apparatus and repairs of same for the following marine hospitals, during the fiscal year ending June 30, 1886:

Cairo, Ill	$4,715 60
Chelsea, Mass	800 02
Chicago, Ill	543 31
Cincinnati, Ohio	13 77
Detroit, Mich	22 45
Louisville, Ky	83 57
Memphis, Tenn	5 35
Portland, Me	620 51
Port Townsend, Wash	1 50
St. Louis, Mo	7,880 95
San Francisco, Cal	83 63
Vineyard Haven, Mass	6 00
	14,776 66

Chicago, Ill., Marine Hospital.

Balance of construction appropriation	$98 97
Appropriated, July 7, 1884, for shore protection	8,000 00
	8,098 97

Expended as follows:

Fiscal year ending June 30, 1885	$7,972 76	
Fiscal year ending June 30, 1886	32 95	
		8,005 71
Balance in Treasury		93 26

50

Amounts expended from appropriation for vaults, safes, and locks for public buildings during the fiscal year ending June 30, 1886, for the following marine hospitals, viz:

Cairo, Ill	$97 01
Chicago, Ill	5 00
Cincinnati, Ohio	69 68
New Orleans, La	50 00
Vineyard Haven, Mass	58 16
	279 85

Special appropriations.

Key West, Fla., Marine Hospital appropriated for as follows:

June 16, 1880, for repairs of sea-wall	$1,000 00
August 7, 1882, for completion of sea-wall	4,000 00
July 7, 1884, for completion of sea-wall	1,000 00
	6,000 00

Expended as follows:

Fiscal year ending June 30, 1881	$996 49	
Fiscal year ending June 30, 1883	4,000 25	
Fiscal year ending June 30, 1886	800 00	
		5,796 74
Balance in Treasury		203 26

TABLE I.—*Comparative table of number treated*—1867 *to* 1886.

The following tabular statement will serve to illustrate the results of the reorganization of the Marine-Hospital Service in 1871:

Operations of the Marine-Hospital Service from July 1, 1867, to June 30, 1886.

Fiscal years.	No. of places at which relief is authorized.	No. of sick and disabled seamen furnished relief.
Prior to reorganization:		
1868	64	11,535
1869	64	11,356
1870	74	10,560
After reorganization:		
1871	72	14,256
1872	81	13,156
1873	91	13,529
1874	91	14,364
1875	94	15,009
1876	94	16,808
1877	100	15,175
1878	210	18,223
1879	210	20,922
1880	210	24,860
1881		32,613
1882		36,184
1883		40,195
1884		44,761
1885		41,714
1886		43,822

TABLE II.—*Exhibit of Operations of the Service during the Year ended June 30, 1886.*

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1885.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1886.	Number of days' relief in hospital.	Number of seamen furnished office-relief.	Number of times office-relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage-tax collected.
Total	**43822**	**712**	**11912**	**12624**	**11526**	**407**	**691**	**316205**	**31198**	**48443**	**2986**	**$376665 01**	**$508409 54**
Albany, N. Y	4	1	3	4	3		1	463			30	332 60	
Alexandria, Va	69		4	4	4			56	65	111		312 09	116 25
Apalachicola, Fla	74		35	35	33	1	1	837	39	39		1,499 50	845 16
Ashtabula, Ohio	153								153	325		173 43	
Astoria, Oreg	52	3	42	45	40	3	2	1,339	7	7		1,406 80	3,632 46
Baltimore, Md	1,815	18	405	423	395	16	12	11,359	1,392	1,887	88	12,290 27	28,214 15
Bangor, Me	115	4	40	44	39	2	3	948	71	127	6	1,612 26	139 38
Barnstable, Mass	187								187	1,128		1,588 59	214 61
Bath, Me	55		8	8	8			254	47	111	16	607 48	63 39
Beaufort, N. C	5		1	1	1			5	4	58		77 00	
Beaufort, S. C	11								11	11		12 50	1,920 48
Belfast, Me	38	1	4	5	4	1		149	33	189	1	485 25	154 86
Bismarck, Dak	19		6	6	5		1	295	13	34		564 70	
Boston, Mass	1,815	34	575	609	560	12	37	15,644	1,206	1,584	138	16,232 62	40,544 10
Brashear, La	2								2	2		10 00	9 90
Bridgeport, Conn													32 34
Brownsville, Tex	3								3	26	4	150 00	59 49
Brunswick, Ga	80								80	89		144 25	4,014 54
Buffalo, N. Y	1,180	17	217	234	216	8	10	6,957	946	1,139	80	7,251 72	
Burlington, Iowa	3		1	1	1			11	2	9		18 90	
Burlington, Vt												11 00	461 19
Cairo, Ill	814	17	345	362	340	6	16	7,893	452	622	2	9,422 89	
Cape Vincent, N. Y													72
Castine, Me	3								3	17		27 50	
Cedar Keys, Fla	30	1	14	15	13	1	1	255	15	18		483 35	
Charleston, S. C	1,153	15	200	215	195	9	11	6,901	938	1,777	36	8,921 66	6,043 23
Chattanooga, Tenn	54		3	3	1	2		44	51	116	6	349 00	
Chicago, Ill	4,419	65	705	770	712	22	36	24,805	3,649	5,097	111	21,495 20	
Cincinnati, Ohio	1,594	20	301	321	293	13	15	7,215	1,273	1,934	15	11,159 85	
Cleveland, Ohio	666	10	163	173	162	1	10	3,479	493	755	80	3,126 76	221 88
Corpus Christi, Tex	16		6	6	3		3	81	10	10		407 00	128 10
Crisfield, Md	37		2	2	2			19	35	90		282 77	
Detroit, Mich	1,442	23	307	330	293	6	31	10,910	1,112	1,549	59	11,362 46	149 40
Dubuque, Iowa	105	7	75	82	72	1	9	1,873	23	26	19	2,157 62	
Duluth, Minn	129	2	17	19	17	1	1	407	110	137	12	598 40	11 70
Eastport, Me	75	1	2	3	2	1		15	72	350		368 50	753 17

East Saginaw, Mich	111	1	30	31	26		5	763	80	170	17	1,114 11	
Edenton, N. C	17		4	4	4			19	13	19		60 95	
Edgartown, Mass												118 25	385 92
Elizabeth City, N. C	60		1	1	1			40	59	81	120	183 30	
Ellsworth, Me	45	2	5	7	5	1	1	183	38	195	7	562 50	8 16
Empire City, Oreg	9	1	3	4	4			130	5	15		454 75	
Erie, Pa	148	2	31	33	29		4	881	115	142	14	883 51	
Escanaba, Mich	47		7	7	7			184	40	163		598 71	
Eureka, Cal	45		35	35	33		2	709	10	14		999 77	363 42
Evansville, Ind	790	7	261	268	248	5	15	5,402	522	794	16	4,986 60	
Fall River, Mass													31 23
Fernandina, Fla	49	1	17	18	17		1	187	31	61		600 59	234 60
Fredericksburgh, Va												200 00	
Gallipolis, Ohio	347	6	78	84	74	2	8	1,841	263	875	24	3,780 71	
Galveston, Tex	697	15	318	333	310	8	15	6,885	364	515	67	9,258 99	6,202 70
Georgetown, D. C	229	7	82	89	81	4	4	2,988	140	195	4	2,253 00	105 93
Georgetown, S. C	88		11	11	10	1		100	77	189		463 64	11 22
Gloucester, Mass	4								4	5		14 45	1,263 69
Government Hospital for the Insane	19	15	4	19		3	16	5,588				3,592 28	
Grand Haven, Mich	100	1	18	19	19			351	81	230	50	1,316 29	
Indianola, Tex	4		2	2	2			20	2	6		339 00	
Jacksonville, Fla	169	3	110	113	107	2	4	2,590	56	114	54	2,920 30	135 79
Key West, Fla	1,008	9	162	171	158	3	10	3,664	837	1,156	15	4,724 77	547 94
La Crosse, Wis	107	6	83	89	79	2	8	1,937	18	59	4	2,458 25	
Little Rock, Ark	36		14	14	11	1	2	171	22	48	6	1,385 38	
Louisville, Ky	1,116	29	293	322	300	9	13	8,810	794	1,188	18	9,254 06	
Ludington, Mich	18		1	1	1			33	17	33		205 73	
Machias, Me	65		22	22	18	1	3	596	43	52		768 67	20 25
Manistee, Mich	70	1	14	15	11	2	2	259	55	72	21	484 18	
Marblehead, Mass													64 23
Marquette, Mich	101	2	13	15	11		4	323	86	86	8	667 00	
Memphis, Tenn	1,010	9	224	233	217	13	3	3,616	777	1,326	11	5,760 24	
Middletown, Conn	9	1	8	9	7		2	244				258 00	
Milwaukee, Wis	688	16	283	299	278	6	15	6,568	389	459	101	6,220 86	
Mobile, Ala	771	6	307	313	281	10	22	5,845	458	631	42	7,381 48	4,242 42
Nashville, Tenn	76	4	68	72	68		4	1,677	4	4	4	1,799 24	
Newark, N. J													225 90
New Bedford, Mass	59							59	93	28		268 20	263 50
New Berne, N. C	461		51	51	44	1	6	1,115	410	596	20	1,623 94	15 60
Newburyport, Mass													77 81
New Haven, Conn	81	4	49	53	49	2	2	1,271	28	34	27	1,780 00	451 44
New London, Conn	106		35	35	32	1	2	862	71	81		1,195 58	131 73
New Orleans, La	2,337	21	641	662	611	23	28	12,408	1,675	2,745	39	16,062 78	32,945 10
Newport, Ark	41	1	20	21	20		1	246	20	26	2	601 45	
Newport, R. I	53	1	18	19	18	1		520	34	41	59	803 80	61 65
Newport News, Va													1,004 85
New York, N. Y	2,996	79	1,137	1,216	1,107	38	71	32,373	1,780	2,498	528	34,504 24	226,734 51
Norfolk, Va	1,469	25	480	505	469	15	21	11,713	964	1,122	96	15,557 78	3,798 15
Ogdensburg, N. Y	52		2	2	2			15	50	162		266 75	88 62
Oswego, N. Y	70		13	13	13			206	57	60	31	411 35	533 67
Pascagoula, Miss	4								4	4		1 20	
Pensacola, Fla	123	2	105	107	100	2	5	2,166	26	40	22	2,953 33	13,595 46

TABLE II.—*Exhibit of Operations of the Service during the Year ended June* 30, 1886—Continued.

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1885.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1886.	Number of days' relief in hospital.	Number of seamen furnished office-relief.	Number of times office-relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage-tax collected.
Perth Amboy, N. J													$368 28
Petersburg, Va	4								4	4		$15 55	
Philadelphia, Pa	1,740	17	429	446	393	16	37	10,430	1,294	1,658	180	12,642 96	56,744 52
Pittsburgh, Pa	1,401	13	276	289	268	11	10	7,110	1,112	1,379	38	10,259 38	
Plattsburg, N. Y													1,718 34
Plymouth, Mass	6		1	1	1			10	5	20	16	201 00	6 15
Port Huron, Mich	218		3	3	3			84	215	631		352 65	
Portland, Me	753	12	198	210	194	4	12	7,218	543	680	112	8,487 81	6,849 10
Portland, Oreg	294	8	95	103	93	3	7	2,929	191	266	58	4,137 02	3,181 20
Portsmouth, N. H	30	2	7	9	9			211	21	44	8	457 30	192 69
Port Townsend, Wash	402	9	202	211	188	7	16	4,961	191	290	25	5,525 09	5,347 41
Providence, R. I	108	4	79	83	74	2	7	1,893	25	25		1,966 40	326 22
Richmond, Va	93	4	60	64	62	1	1	1,564	29	42	1	2,273 74	575 84
Roche Harbor, Wash													84 33
Rochester, N. Y												20 00	
Rome, Ga	65		5	5	5			150	60	60	1	434 90	
Saco, Me													8 37
Sag Harbor, N. Y	7	1	3	4	3	1		89	3	31		323 85	
Saint Louis, Mo	1,501	40	474	514	477	14	23	11,471	987	1,565	25	12,979 88	
Saint Mary's, Ga													151 67
Saint Paul, Minn	46	11	35	46	37	3	6	1,173			7	1,276 60	
Saint Vincent, Minn													58 78
Salem, Mass	9	1	2	3	1	2		48	6	6		126 00	385 86
San Diego, Cal	20		19	19	18	1		531	1	4		787 60	616 44
Sandusky, Ohio	19	1		1		1		165	18	78		355 75	
San Francisco, Cal	1,807	35	538	573	491	43	39	18,959	1,234	2,294	53	19,017 26	31,849 17
Sault Ste. Marie, Mich	108	2	21	23	20	1	2	345	85	352	15	672 93	
Savannah, Ga	1,084	5	302	307	293	8	6	5,973	777	916	19	7,986 30	9,130 32
Shieldsborough, Miss													1,808 37
Shreveport, La	84	3	36	39	36	2	1	489	45	100		1,645 00	
Stika, Alaska	4								4	4		691 82	42 13
Somers Point, N. J	2								2	9		9 00	
Stonington, Conn	3								3	3		6 75	15 09
Tacoma, Wash	7		6	6	6			65	1	3			
Tampa, Fla	3								3	3			
Tappahannock, Va	89	3	65	68	68			999	21	32		1,265 45	
Toledo, Ohio	84	1	39	40	36		4	1,273	44	82	5	1,322 70	

Tuckerton, N. J.	31		7	7	7			115	24	96	166	713 00	
Vicksburg, Miss	168	4	98	102	99	1	2	1,875	66	206	4	2,395 80	
Vineyard Haven, Mass	165	1	73	74	65	6	3	1,513	91	118		3,997 17	
Waldoboro and Rockland, Me	115		4	4	3	1		72	111	334	7	609 59	552 88
Wheeling, W. Va	27		20	20	20			465	7	12	10	588 00	
Wilmington, Cal													3,216 12
Wilmington, Del	3								3	3		2 00	698 31
Wilmington, N. C	772	16	180	196	171	14	11	4,661	576	787	32	6,045 34	3,124 56
Wiscasset, Me	7		1	1	1				6	7		29 54	81 40
Cape Charles Quarantine Station	3	2	1	3	2	1		5				(*)	
Delaware Breakwater Quarantine Station	86	1	26	27	27			471	59	83	46		
Ship Island Quarantine Station	322		66	66	59	2	5	1,175	256	443			

*Expenses of quarantine service given elsewhere.

Table of Relief-Districts.

1.—NORTH ATLANTIC DISTRICT.

Bangor, Me.; Barnstable, Mass.; Bath, Me.; Belfast, Me.; Boston, Mass.; Bristol, R. I.; Burlington, Vt.; Castine, Me.; Eastport, Me.; Edgartown, Mass.; Ellsworth, Me.; Fall River, Mass.; Gloucester, Mass.; Hyannis, Mass.; Kennebunk, Me.; Machias, Me.; Marblehead, Mass.; Nantucket, Mass.; New Bedford, Mass.; Newburyport, Mass.; Newport, R. I.; Plattsburg, N. Y.; Plymouth, Mass.; Portland, Me.; Portsmouth, N. H.; Providence, R. I.; Rockland, Me.; Saco, Me.; Salem, Mass.; Vineyard Haven, Mass.; Waldoboro', Me.; Wiscasset, Me.; and York, Me.; together with all subordinate ports.

2.—MIDDLE ATLANTIC DISTRICT.

Albany, N. Y.; Bridgeport, Conn.; Bridgeton, N. J.; Greenport, N. Y.; Lamberton, N. J.; Lewes, Del.; Middletown, Conn.; Newark, N. J.; New Haven, Conn.; New London, Conn.; New York, N. Y.; Patchogue, N. Y.; Perth Amboy, N. J.; Philadelphia, Pa.; Sag Harbor, N. Y.; Somers Point, N. J.; Stonington, Conn.; Troy, N. Y.; Tuckerton, N. J.; and Wilmington, Del.; together with all subordinate ports.

3.—SOUTH ATLANTIC DISTRICT.

Alexandria, Va.; Annapolis, Md.; Baltimore, Md.; Beaufort, N. C.; Beaufort, S. C.; Brunswick, Ga.; Charleston, S. C.; Chincoteague, Va.; Crisfield, Md.; Eastville, Va.; Edenton, N. C.; Elizabeth City, N. C.; Fernandina, Fla.; Fredericksburg, Va.; Georgetown, D. C.; Georgetown, S. C.; Jacksonville, Fla.; New Berne, N. C.; Norfolk, Va.; Petersburg, Va.; Richmond, Va.; St. Augustine, Fla.; Savannah, Ga.; Tappahannock, Va.; Wilmington, N. C.; and Yorktown, Va.; together with all subordinate ports.

4.—DISTRICT OF THE GULF.

Apalachicola, Fla.; Brashear, La.; Brownsville, Tex.; Cedar Keys, Fla.; Corpus Christi, Tex.; El Paso, Tex.; Galveston, Tex.; Indianola, Tex.; Key West, Fla.; Mobile, Ala.; New Orleans, La.; Pascagoula, Miss.; Pensacola, Fla.; Rome, Ga.; Shreveport, La.; and Tampa, Fla.; together with all subordinate ports.

5.—DISTRICT OF THE OHIO.

Chattanooga, Tenn.; Cincinnati, Ohio; Evansville, Ind.; Gallipolis, Ohio; Louisville, Ky.; Nashville, Tenn.; Paducah, Ky.; Parkersburg, W. Va.; Pittsburgh, Pa.; and Wheeling, W. Va.; together with all subordinate ports.

6.—DISTRICT OF THE MISSISSIPPI.

Bismarck, Dak.; Burlington, Iowa; Cairo, Ill.; Dubuque, Iowa; Galena, Ill.; La Crosse, Wis.; Little Rock, Ark.; Memphis, Tenn.; Natchez, Miss.; Newport, Ark.; Omaha, Nebr.; Pembina, Dak.; St. Louis, Mo.; St. Paul, Minn.; and Vicksburg, Miss.; together with all subordinate ports.

7.—DISTRICT OF THE GREAT LAKES.

Ashtabula, Ohio; Buffalo, N. Y.; Cape Vincent, N. Y.; Chicago, Ill.; Cleveland, Ohio; Detroit, Mich.; Duluth, Minn.; Dunkirk, N. Y.; Erie, Pa.; Escanaba, Mich.; East Saginaw, Mich.; Grand Haven, Mich.; Green Bay, Wis.; Kenosha, Wis.; L'Anse, Mich.; Manistee, Mich.; Manitowoc, Wis.; Marquette, Mich.; Milwaukee, Wis.; Muskegon, Mich.; Ogdensburg, N. Y.; Oswego, N. Y.; Racine, Wis.; Rochester, N. Y.; St. Joseph, Mich.; Sandusky, Ohio; Sault Ste. Marie, Mich.; Sheboygan, Wis.; and Toledo, Ohio; together with all subordinate ports.

8.—DISTRICT OF THE PACIFIC.

Astoria, Oreg.; Empire City, Oreg.; Eureka, Cal.; Portland, Oreg.; Port Townsend, Wash.; San Diego, Cal.; San Francisco, Cal.; Sitka, Alaska; Wilmington, Cal.; and Yaquina, Oreg.; together with all subordinate ports.

All relief-stations where the service is under the charge of a medical officer of the Marine-Hospital Service are known as relief-stations of Class 1. Relief-stations where specific arrangements have been made for the care and treatment of sick or disabled seamen at rates fixed by the Treasury Department, but where collectors of customs, on account of the absence of a medical officer of the Service, are authorized and required to issue permits and to supervise the relief furnished, are known as relief-stations of Class 2. All other ports where there are officers of the customs revenue, but where, on account of the infrequency of applications for relief, the absence of any hospital, or from other causes, sick or disabled seamen are cared for only in cases of emergency, are known as relief-stations of Class 3.

TABLE III.—*Summary of Physical Examinations of Seamen made by Medical Officers of the United States Marine-Hospital Service, Year ended June* 30, 1886.

Summary of examinations and causes of rejection.	Pilots.	Revenue marine.	Merchant marine.	Life-saving Service.	Light-house Service.	Total.
Summary of examinations:						
Total number examined	1,680	183	95	1,025	3	2,986
Number passed	1,633	170	88	973	2	2,866
Number rejected	47	13	7	52	1	120
Causes of rejection:						
Color blind	47	1		11		
Malarial fever, intermittent			1			
Syphilis		2				
Debility				2		
Rheumatism				3		
Tubercle of lungs		1				
Paralysis of muscles of eye-ball				1		
Conjunctivitis			1			
Opacity of cornea				1		
Myopia		1	1			
Heart disease		3		10		
Varicose veins		1		1		
Bronchitis		1		1		
Tonsillitis			1			
Hernia		1		6	1	
Piles, internal				1		
Piles, external				1		
Cystitis, chronic				1		
Scrofula		1				
Varicocele				2		
Hydrocele				3		
Ankylosis		1		1		
Floating cartilage in knee				1		
Psoriasis				1		
Exhaustion				3		
Fracture of scapula			1			
Not stated				1		
Refused examination			2	1		

TABLE IV.—*Statement, by Districts, of the Number of Patients Treated during the Year ended June* 30, 1886.

Districts.	Total cases.	Patients in hospital July 1, 1885.	Admitted during the year.	Total number treated in hospital.	Number discharged from hospital.	Number of deaths.	Number in hospital June 30, 1886.	Number of days hospital relief furnished.	Number of seamen furnished office relief.
North Atlantic	3,707	63	1,039	1,102	1,002	34	66	29,274	2,605
Middle Atlantic	4,982	103	1,671	1,774	1,601	58	115	45,847	3,208
South Atlantic	7,773	112	1,979	2,001	1,924	74	93	55,877	5,682
The Gulf	5,231	57	1,631	1,688	1,552	50	86	32,800	3,543
The Ohio	5,405	79	1,300	1,379	1,272	42	65	32,564	4,026
The Mississippi	3,850	95	1,375	1,470	1,358	41	71	30,561	2,380
The Great Lakes	9,823	144	1,884	2,028	1,856	48	124	58,008	7,755
The Pacific	2,640	56	940	996	873	57	66	29,623	1,644
Quarantine stations	411	3	93	96	88	3	5	1,651	315
Grand total	43,822	712	11,912	12,624	11,526	407	691	316,205	31,198

TABLE V.—*Ratio of Patients Treated in Hospital in each District.*

Districts.	Per cent. of total number of patients.	Districts.	Per cent. of total number of patients.
North Atlantic	8.73	The Mississippi	11.65
Middle Atlantic	14.05	The Great Lakes	16.07
South Atlantic	16.56	The Pacific	7.89
The Gulf	13.37	The quarantine stations	0.76
The Ohio	10.92		

TABLE VI.—*Average Duration of Treatment in Hospital in each District.*

Districts.	Average number of days.	Districts.	Average number of days.
North Atlantic	26.56	The Mississippi	20.79
Middle Atlantic	25.84	The Great Lakes	28.61
South Atlantic	26.72	The Pacific	29.74
The Gulf	19.43	The quarantine stations	17.20
The Ohio	23.61		

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries Treated during the Year ended June* 30, 1886.

[The nomenclature of diseases followed in this report is the 2d edition, revised by the Royal College of Physicians, London, England, notice of the use of which was announced officially to this Service by Department Circular issued from the office of the Supervising Surgeon-General, November 7, 1885.]

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Grand Total of all Cases	712	11912	8285	3004	237	407	691	31198	43822
GENERAL DISEASES	290	5471	3785	1392	98	197	289	14060	19821
LOCAL DISEASES	327	4770	3138	1350	124	188	297	15070	20167
POISONS	1	48	45	1	1		2	70	119
INJURIES	94	1623	1317	261	14	22	103	1998	3715
NORTH ATLANTIC.									
TOTAL CASES	63	1039	753	236	13	34	66	2605	3707
General Diseases	27	462	338	98	7	17	29	1049	1538
Cow-pox								121	121
Measles		5	5						5
Scarlet fever		1	1						1
Dengue								1	1
Influenza								6	6
Whooping-cough								1	1
Mumps								2	2
Diphtheria								1	1
Simple continued fever		5	3			2		15	20
Febricula		2		2				4	6
Enteric fever	3	29	24	2		2	4	9	41
Epidemic diarrhœa		1	1					2	3
Dysentery	1	14	12	2		1		22	37
Malarial intermittent fever	3	94	85	8		1	3	124	221
Malarial remittent fever	3	45	40	4		2	2	28	76
Malarial cachexia		5	5					24	29
Erysipelas:									
Simple		5	4				1	7	12
Phlegmonous		7	5	1		1			7
Syphilis:									
Primary	3	19	12	7			3	56	78
Secondary	3	31	21	11	1	1		114	148
Gonorrhœa		28	21	6			1	180	208
Scurvy		1		1				4	5
Alcoholism		6	5	1				3	9
Delirium tremens		2	2						2
Debility		8	6	1			1	44	52
Rheumatic fever	4	37	35	2			4	25	66
Rheumatism	2	68	42	21	1	1	5	163	233
Osteo-arthritis		2		1			1	1	3
Fibroma		1	1					1	2
Lipoma								2	2
Myxoma								3	3
Dermoid cyst		1					1		1
Warts		1	1					1	2
Condyloma		1	1					6	7
Carcinoma:									
Of bladder	1			1					1
Epithelioma		1			1			4	5
Osteoid		1			1				1
Tubercle of lung	4	30		23	2	6	3	40	74
Scrofula		2		1	1			1	3
Anæmia		8	5	3				32	40
Diabetes mellitus		1	1					2	3
Local Diseases	30	453	309	123	6	15	30	1343	1826
DISEASES OF THE NERVOUS SYSTEM	7	22	14	7	3	2	3	94	123
Congestion of brain								1	1
Softening of brain or cord		1		1					

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continue

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office relief.	Total treated in hospital and dis.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE NERVOUS SYSTEM—Cont'd.									
Locomotor ataxy	2	2		3			1	3	
Paralysis								3	
Hemiplegia		4		2	1		1	3	
Paraplegia	1				1			3	
Local paralysis								4	
Wry-neck								1	
Neuralgia	3	6	7	1		1		39	
Facial								19	
Sciatica		5	5					13	
Vertigo		1					1	1	
Megrim								1	
Epilepsy		2	2					1	
Hypochondriasis		1			1			2	
Mania	1					1			
DISEASES OF THE EYE	2	13	8	6			1	44	
Chemosis								1	
Conjunctivitis:									
Catarrhal		2	2					8	
Chronic								4	
Pterygium		1	1					4	
Ulcer of cornea		2		2				1	
Iritis	2	4	5	1				5	
Detachment, retina								3	
Retinitis		2		2				2	
Cataract (lenticular)		1					1		
Myopia								2	
Astigmatism								1	
Night-blindness								1	
Day-blindness								1	
Amaurosis								1	
Epiphora		1		1					
Blepharitis								6	
Stye								1	
Hæmatoma of orbit								1	
Trichiasis								2	
DISEASES OF THE EAR		5	4	1				14	
Inflammation of the external meatus:									
Acute								1	
Chronic								3	
Abscess of the external meatus		1	1						
Accumulation of wax								3	
Inflammation of the middle ear		3	3					4	
Obstruction of Eustachian tube								1	
Perforation of membrana tympani		1		1					
Deafness								2	
DISEASES OF THE NOSE								10	
Nasal catarrh								8	
Ulceration								1	
Ozæna								1	
DISEASES OF THE CIRCULATORY SYSTEM	1	19		18			2	24	
Hydropericardium								1	
Pericarditis								1	
Valvular disease:									
Aortic		3		3				2	
Mitral	1	12		12			1	9	
Angina pectoris		1		1				4	
Palpitation and irregular action of heart		1		1				2	
Arteritis								1	
Varix		2		1			1	4	

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE RESPIRATORY SYSTEM	1	67	39	17	2	8	2	205	273
Laryngitis:									
Acute		1	1					15	16
Chronic								1	1
Aphonia		1	1						1
Bronchitis:									
Acute		12	10	2				108	120
Chronic		8	1	5	1		1	40	48
Catarrhal		1		1				16	17
Dilatation of bronchi								1	1
Spasmodic asthma		6	4	1	1			12	18
Hæmoptysis of lung								1	1
Pneumonia	1	18	12	3		4		6	25
Pheumonic phthisis:									
Acute		4		2		2			4
Chronic		3		1		2			3
Emphysema								1	1
Pleurisy:									
Acute		10	9				1	3	13
Chronic		3	1	2				1	4
DISEASES OF THE DIGESTIVE SYSTEM	3	78	58	16		1	6	449	530
Cyst of the lip								1	1
Stomatitis		1	1					2	3
Ulcerative stomatitis								3	3
Cyst of the jaw								1	1
Caries of dentine and cementum								15	15
Abscess of dental periosteum								7	7
Inflammation of gums and alveoli		1	1						1
Ulceration of gums and alveoli								2	2
Elongated uvula								1	1
Sore throat		5	4	1				16	21
Quinsy		3	3					17	20
Follicular tonsilitis		3	2	1				15	18
Ulceration of fauces		3	3					6	9
Abscess of salivary glands								1	1
Salivary fistula								1	1
Cyst of salivary glands								1	1
Follicular inflammation of the pharynx		1		1				23	24
Hæmorrhage of the stomach								1	1
Inflammation of the stomach		4		3			1	12	16
Dyspepsia		11	7	3			1	155	166
Gastrodynia								1	1
Pyrosis								2	2
Vomiting								2	2
Hæmorrhage of the intestines		1	1						1
Enteritis		3	1			1	1	3	6
Typhlitis		1	1					4	5
Hernia	1			1				29	30
Bothriocephalus latus		1	1						1
Diarrhœa	1	22	19	3			1	68	91
Constipation		3	3					16	19
Colic		1	1					10	11
Abscess of the rectum								1	1
Abscess of the anus		1		1					1
Piles:									
Internal		1	1					4	5
External		2	2					6	8
Fistula in ano	1	2	3					3	6
Fissure of the anus		2	1				1		2
Pruritus ani		1	1					1	2
Hypertrophy of the liver								4	4
Congestion of the liver								3	3
Hepatitis		1		1				4	5

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

NORTH ATLANTIC.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Cont'd.									
Abscess of liver		1		1				1	2
Jaundice		3	2				1	2	5
Gallstones								4	4
Biliary colic								1	1
DISEASES OF THE LYMPHATIC SYSTEM	1	23	16	5			3	36	60
Congestion of the spleen		1	1					2	3
Splenitis								1	1
Hypertrophy of lymph-glands		2	1				1	8	10
Inflammation of lymph-vessels								2	2
Inflammation of lymph-glands								15	15
Suppuration of lymph-glands	1	20	14	5			2	8	29
DISEASES OF THE THYROID BODY								1	1
Inflammation								1	1
DISEASES OF THE URINARY SYSTEM	2	24	14	8		3	1	34	60
Bright's disease	1	8		5		3	1	3	12
Calculus in kidney	1			1					1
Diabetes insipidus								5	5
Suppression of urine		1	1					3	4
Hæmaturia		1	1					3	4
Inflammation of bladder:									
Acute		10	8	2				11	21
Sub-acute		1	1						1
Chronic		1	1					4	5
Calculus of bladder		1	1						1
Irritability of bladder								1	1
Retention of urine		1	1						1
Incontinence of urine								4	4
DISEASES OF THE GENERATIVE SYSTEM	4	70	57	13	1		3	187	261
Urethritis								6	6
Gleet		1		1				55	56
Urinary abscess		2	1	1					2
Ulcer of the urethra								1	1
Stricture of urethra:									
Organic	2	20	14	5	1		2	8	30
Spasmodic								2	2
Extravasation of urine		1	1						1
Acute inflammation of prostate gland								7	7
Chronic inflammation of prostate gland								11	11
Inflammation of the penis								1	1
Inflammation of glans of penis								3	3
Ulcer of penis	1	25	22	4				48	74
Phimosis								1	1
Paraphimosis		2	2					2	4
Inflammation of the scrotum								1	1
Abscess of the scrotum		1	1						1
Varicocele								7	7
Hæmatocele of tunica vaginalis		1	1						1
Hydrocele of tunica vaginalis		2	1	1				10	12
Orchitis:									
Acute		5	4				1	10	15
Chronic		2	1	1				5	7
Epididymitis	1	7	8						8
Spermatorrhœa								7	7
Impotence								1	1
Neuralgia of the testicle								1	1
Monorrhagia		1	1						1
DISEASES OF THE ORGANS OF LOCOMOTION	2	35	16	14		1	6	27	64
Ostitis		1	1						1
Periostitis		8	6	2				6	14

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Caries	2	1	2	1				3	6
Necrosis								1	1
Synovitis:									
Acute		6	2	3			1	4	10
Chronic		4	2	2					4
Ankylosis		3		2			1	1	4
Loose cartilage								1	1
Degeneration of cartilage		1					1		1
Psoas abscess		1				1		2	3
Caries and necrosis of spine		5		2			3	3	8
Lateral curvature of spine		2		2					2
Inflammation of muscles								2	2
Abscess of muscles		1	1						1
Inflamed bursa								4	4
Thecal abscess		1	1						1
Ganglion		1	1						1
DISEASES OF THE CONNECTIVE TISSUE	2	17	12	7				35	54
Œdema								1	1
Inflammation		2		2				9	11
Abscess	2	15	12	5				25	42
DISEASES OF THE SKIN	5	80	71	11		3		183	268
Erythema								3	3
Urticaria								6	6
Eczema		6	3	3				28	34
Impetigo								1	1
Pityriasis								1	1
Prurigo								1	1
Psoriasis		1	1					18	19
Herpes								6	6
Zona		1	1					1	2
Pemphigus								1	1
Acne								4	4
Chilblain								1	1
Frostbite		28	27	1				14	42
Ulcer	2	15	13	3			1	36	53
Boil	1	9	9	1				29	39
Carbuncle	1	8	9					1	10
Whitlow	1	6	2	3			2	11	18
Onychia		2	2						2
Xanthelasma								1	1
Wen		1	1					3	4
Pruritus								2	2
Ringworm								4	4
Tinea versicolor								1	1
Itch		2	2					2	4
Malingerer		1	1					8	9
Poisons		2	2					10	12
Lead		1	1						1
Alcohol								2	2
Opium								2	2
Tobacco								5	5
Putrid and morbid exhalations		1	1					1	2
POISONED WOUNDS		3	3					1	4
Venomous animals		1	1					1	2
Mineral substances		2	2						2

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—				Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Injuries	6	119	101	15		2	7	202	327
GENERAL INJURIES		17	15	2				19	36
Burns and scalds		3	3					4	7
Effects of cold		2	2					8	10
Sunstroke								2	2
Multiple injury		8	7	1				5	13
Privation		1		1					1
Exhaustion		3	3						3
LOCAL INJURIES	6	101	85	13		2	7	179	286
Rupture of tendon								1	1
Strain of muscles								1	1
Contusion of scalp		2	2					3	5
Scalp-wound:									
Bone not exposed		1	1					1	2
Bone exposed		1	1						1
Fracture of the vault of the skull								1	1
Concussion of brain		1	1						1
Contusion of face		1		1				5	6
Wound of face		2	2					1	3
Fracture of facial bones		2	1				1	1	3
Foreign body in cornea or conjunctiva								1	1
Wound of eyelid								1	1
Wound of neck								1	1
Contusion of the chest		2		1			1	9	11
Fracture of the ribs		3	3					3	6
Contusion of back								2	2
Sprain of back		7	7					15	22
Concussion of cord								2	2
Compression of cord without fracture	1	1				2		1	3
Contusion of abdomen								1	1
Contusion of perineum		1	1						1
Contusion of testicle		1	1					3	4
Contusion of upper extremities		3	1	1			1	32	35
Sprain of the shoulder		1	1					2	3
Sprain of the elbow		1	1					3	4
Sprain of the wrist		1	1					9	10
Wound of the upper extremities	1	14	12	2			1	25	40
Wound of joint, upper extremities								1	1
Fracture of the clavicle		1					1		1
Fracture of the scapula		1	1						1
Fracture of the humerus								5	5
Fracture of the radius		1	1						1
Fracture of the ulna		1	1					1	2
Fracture of carpus, metacarpus, and phalanges		1	1					1	2
Dislocation of the humerus	1	1	2					3	5
Contusion of the lower extremities	1	19	17	3				10	30
Sprain of the hip		2	2					2	4
Sprain of the knee		3	2	1				8	11
Sprain of the ankle		6	6					13	19
Sprain of the foot								1	1
Wound of the lower extremities		4	4					3	7
Fracture of femur		2	2					1	3
Fracture of cervix femoris								1	1
Fracture of patella	1		1					2	3
Fracture of leg, both bones	1	3	3	1					4
Fracture of tibia alone								1	1
Fracture of fibula alone		4	4					1	5
Fracture of tarsus		3		2			1		3
Fracture of metatarsus		1	1						1
Fracture of phalanges of toes		1	1						1
Dislocation of the femur at the hip		1		1					1
Dislocation of the foot at the ankle		1					1	1	2
AMPUTATIONS		1	1					4	5
Amputation of fingers		1	1					3	4
Amputation of toes								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
TOTAL CASES	**103**	**16 1**	**1057**	**512**	**32**	**58**	**115**	**3208**	**4982**
General Diseases	**39**	**758**	**478**	**240**	**6**	**28**	**45**	**1424**	**2221**
Small-pox								1	1
Measles		2	1				1		2
Dengue		1				1			1
Mumps								1	1
Cerebro-spinal fever		1					1		1
Enteric fever	1	17	10	4		2	2		18
Typho-malarial fever		1				1			1
Epidemic diarrhœa		2	2						2
Dysentery	2	18	16	1		3		11	31
Malarial intermittent fever	4	244	209	28	1	3	7	357	605
remittent fever		73	68	2		1	2	1	74
cachexia		20	15	2			3	27	47
Erysipelas:									
Simple		9	7			2		7	16
Phlegmonous		4	3				1		4
Syphilis:									
Primary	3	64	27	34			6	74	141
Secondary	5	47	7	44			1	218	270
Gonorrhœa	4	24	23	5				292	320
Scurvy		2	2						2
Alcoholism		1		1				5	6
Debility		18	10	7			1	58	76
Rheumatic fever	6	43	27	18	1	1	2	88	137
Rheumatism	7	101	46	52		1	9	208	316
Gout								2	2
Osteo-arthritis	2	1	1	2					3
Lipoma		1	1					1	2
Adenoma								1	1
Warts		1	1					1	2
Condyloma		2	2					13	15
Lymphoma								1	1
Sarcoma		1					1		1
Carcinoma		2		1	1				2
Epithelioma		1					1		1
Tubercle of lung	5	54		39	3	10	7	44	108
Scrofula								3	3
Anæmia		2				2		10	12
Diabetes mellitus		1				1			1
Local Diseases	**52**	**733**	**438**	**238**	**23**	**29**	**57**	**1613**	**2398**
DISEASES OF THE NERVOUS SYSTEM	8	51	26	21	4	2	6	125	184
Hæmorrhage, cerebral		1				1			1
Inflammation:									
Of cerebral membranes		4	3	1					4
Of spinal cord and its membranes	1				1				1
Spinal meningitis		1	1						1
Myelitis		1		1				1	2
Locomotor ataxy		4		1	1		2	10	14
Hemiplegia	3	2	1	2	1		1	2	7
Paraplegia		3				1	2		3
Local paralysis		14	5	9				10	24
Paralysis agitans		2	1	1					2
Neuralgia	2	5	6	1				54	61
Facial		3	3					11	14
Sciatica		6	5	1				23	29
Vertigo		2		2				5	7
Megrim								1	1
Epilepsy		1		1				3	4
Hypochondriasis		1		1				3	4
Insanity								1	1
Mania	1	1	1		1				2
Melancholia								1	1
Dementia	1						1		1

TABLE V.—*Ratio of Patients Treated in Hospital in each District.*

Districts.	Per cent. of total number of patients.	Districts.	Per cent. of total number of patients.
North Atlantic	8.73	The Mississippi	11.65
Middle Atlantic	14.05	The Great Lakes	16.07
South Atlantic	16.56	The Pacific	7.89
The Gulf	13.37	The quarantine stations	0.76
The Ohio	10.92		

TABLE VI.—*Average Duration of Treatment in Hospital in each District.*

Districts.	Average number of days.	Districts.	Average number of days.
North Atlantic	26.56	The Mississippi	20.79
Middle Atlantic	25.84	The Great Lakes	28.61
South Atlantic	26.72	The Pacific	29.74
The Gulf	19.43	The quarantine stations	17.20
The Ohio	23.61		

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF RESPIRATORY SYSTEM—Cont'd.									
Œdema of lung		1				1			1
Pneumonia		22	12	6	1	2	1	2	24
Cirrhosis of lung		1		1					1
Pnuemonic phthisis:									
Acute		7	5				2	1	8
Chronic		6		1		2	3	4	10
Pleurisy:									
Acute		4	2	1			1	3	7
Chronic	1	7	2	6				6	14
DISEASES OF THE DIGESTIVE SYSTEM	4	105	71	25	3	4	6	478	587
Stomatitis								3	3
Ulcerative stomatitis								1	1
Noma								1	1
Abscess of the antrum		1		1					1
Caries of dentine and cementum								17	17
Abscess of dental periosteum								2	2
Ulceration of gums and alveoli								2	2
Caries of the alveoli		1	1						1
Ulcer of the tongue								4	4
Necrosis of palate								1	1
Hypertrophy of tonsils								2	2
Elongated uvula								1	1
Sore throat								27	27
Quinsy								3	3
Follicular tonsilitis		7	7					17	24
Ulceration of fauces		7	6				1	7	14
Inflammation of salivary glands								1	1
Salivation								1	1
Follicular inflammation of the pharynx		1					1	20	21
Ulceration of pharynx								1	1
Inflammation of the stomach		12	8	3			1	18	30
Dyspepsia	1	11	8	4				89	101
Gastrodynia								1	1
Vomiting								1	1
Inflammation of intestines, catarrhal								3	3
Enteritis		4	2			2		1	5
Typhlitis		1	1						1
Abcess in sub-peritoneal tissue		1					1		1
Obstruction of the intestines		1				1			1
Hernia	1	5	3	3				90	96
Tænia solium		1		1				2	3
Ascaris lumbricoides		1	1						1
Oxyuris vermicularis								1	1
Diarrhœa		21	14	6			1	66	87
Constipation		7	6	1				45	52
Colic		1			1			3	4
Abscess of the anus								1	1
Ulceration of the rectum								2	2
Piles:									
Internal		6	3	3				4	10
External		4	1	1	2			17	21
Fistula in ano	1	2	3					1	4
Hypertrophy of the liver		1					1	2	3
Congestion of the liver		1	1					4	5
Hepatitis	1	1	2					3	5
Cirrhosis of liver		2		2					2
Jaundice		2	1			1		11	13
Inflammation of hepatic ducts and gall-bladder		1	1					1	2
Gallstones								1	1
Biliary colic		1	1						1
Peritonitis		1	1						1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.									
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.	
			Recovered.	Improved.	Not improved.					
Local Diseases.										
DISEASES OF THE LYMPHATIC SYSTEM	3	63	44	17	1		4	69	135	
Hypertrophy of lymph-glands								10	10	
Inflammation of lymph-glands	3	29	20	11			1	40	72	
Suppuration of lymph-glands		34	24	6	1		3	19	53	
DISEASES OF THE URINARY SYSTEM	3	19	8	9		3	2	39	63	
Acute nephritis		3	2	1				2	5	
Bright's disease	2	4		2		3	1	2	8	
Nephralgia								1	1	
Diabetes insipidus	1	1		2				2	4	
Suppression of urine		1	1						1	
Hæmaturia		1					1	4	5	
Lithuria								1	1	
Phosphuria								2	2	
Inflammation of bladder:										
Acute		5	2	3				6	11	
Sub-acute								3	3	
Chronic		1		1				4	5	
Irritability of bladder		1	1					8	9	
Retention of urine		2	2					1	3	
Incontinence of urine								3	3	
DISEASES OF THE GENERATIVE SYSTEM	8	109	84	23	2	3	5	272	389	
Urethritis								5	5	
Gleet		1	1					50	51	
Ulcer of the urethra								1	1	
Stricture of urethra:										
Organic	2	39	26	10	1	2	2	47	88	
Spasmodic								2	2	
Acute inflammation of prostate gland		2	2						2	
Chronic inflammation of prostate gland								2	2	
Inflammation of glans of penis								22	22	
Ulcer of penis	5	20	18	7				75	100	
Gangrene of penis		1	1						1	
Phimosis		4	1	2		1		1	5	
Paraphimosis		3	2	1				2	5	
Chordee								1	1	
Abscess of the scrotum								1	1	
Hydrocele of spermatic cord		1	1					2	3	
Inflammation of spermatic cord								1	1	
Varicocele								9	9	
Hydrocele of tunica vaginalis		3	2		1			1	4	
Orchitis:										
Acute	1	24	22	2			1	18	43	
Chronic		1	1					3	4	
Epididymitis		8	7				1	13	21	
Abscess of testicle		1					1		1	
Spermatorrhœa		1		1				12	13	
Impotence								2	2	
Neuralgia of testicle								1	1	
Leucorrhœa								1	1	
DISEASES OF THE ORGANS OF LOCOMOTION	5	33	18	12	4	1	3	18	56	
Ostitis		1					1		1	
Periostitis		5	3	2				2	7	
Osteo-myelitis		2		1			1		2	
Caries								1	1	
Necrosis	4	1	2	2		1			5	
Dropsy of joints								1	1	
Synovitis:										
Acute	1	12	11	1	1				13	
Chronic		8	2	3	2		1	12	20	
Ankylosis		1		1					1	
Dislocation of articular cartilage								1	1	
Relaxation of ligaments		1		1					1	

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Atrophy of muscles		1		1					1
Inflammation of muscles		1			1				1
Inflammation of tendons								1	1
DISEASES OF THE CONNECTIVE TISSUE	3	45	35	8		1	4	37	85
Œdema		1	1					4	5
Inflammation	2	14	13	1			2	4	20
Abscess	1	30	21	7		1	2	28	59
Undue formation of fat								1	1
DISEASES OF THE SKIN	10	125	95	26	2		12	200	335
Erythema								4	4
Urticaria								2	2
Eczema		6	6					28	34
Pityriasis		1		1					1
Lichen		1	1					1	2
Psoriasis		1		1				4	5
Miliaria								1	1
Herpes		1	1					13	14
Zona		1		1				1	2
Acne								3	3
Steatorrhœa								1	1
Frostbite	1	20	18	3				16	37
Ulcer	7	67	48	15	1		10	61	135
Fissures								2	2
Boil		8	8					35	43
Carbuncle		1		1				3	4
Gangrene	1			1					1
Whitlow	1	17	12	3	1		2	10	28
Onychia								1	1
Wen								2	2
Pruritus								1	1
Ringworm								3	3
Itch		1	1					8	9
Poisons		8	7				1	1	9
Mineral substances		1	1						1
Alcohol		6	5				1	1	7
Carbonic-acid gas		1	1						1
Injuries	12	172	134	34	3	1	12	170	354
GENERAL INJURIES		10	9				1	3	13
Burns and scalds		7	7					2	9
Sunstroke		2	1				1	1	3
Multiple injury		1	1						1
LOCAL INJURIES	12	161	124	34	3	1	11	166	339
Strain of muscles		2	1				1		2
Rupture of muscles								1	1
Strain of tendon		1		1					1
Foreign body in subcutaneous tissue								3	3
Scalp-wound:									
Bone not exposed		4	3	1				7	11
Bone exposed		1	1						1
Contusion of skull		1	1						1
Fracture of the vault of the skull		1				1			1
Concussion of brain								1	1
Contusion of face		2	1				1		2
Wound of face		6	6					2	8
Fracture of facial bones		2		2				1	3
Foreign body in cornea or conjunctiva								2	2
Wound of eyelid								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—				Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.	Died.			
Injuries.									
LOCAL INJURIES—Continued.									
Foreign body in the pharynx								1	1
Contusion of the chest		3	2	1				12	15
Fracture of the ribs	1	10	9	2				8	19
Wound of parietes of chest		1	1						1
Contusion of back		4	4					5	9
Sprain of back		3	1	1	1			8	11
Wound of back		1	1						1
Contusion of pelvis		1	1						1
Wound of organs of generation		1	1						1
Fracture and dislocation of pelvis	1		1						1
Contusion of testicle								2	2
Contusion of upper extremities	1	4	4	1				14	19
Sprain of the shoulder		3	1	2				6	9
Sprain of the elbow								1	1
Sprain of the wrist	1	1	2					11	13
Sprain of the fingers		2	1	1				2	4
Wound of the upper extremities	1	21	16	6				23	45
Fracture of the clavicle		3	2	1					3
Fracture of the humerus	1	4	4				1	1	6
Fracture of the radius		2	1				1		2
Fracture of the ulna		1			1				1
Fracture of both bones of forearm	2	4	3	1	1		1		6
Fracture of carpus, metacarpus, and phalanges		2	2					1	3
Dislocation of the humerus		4	4					3	7
Dislocation of the ulna		1					1		1
Contusion of the lower extremities		15	14				1	18	33
Sprain of the hip		1		1					1
Sprain of the knee		2	1	1				8	10
Sprain of the ankle		10	6	3			1	12	22
Sprain of the foot		1	1					2	3
Wound of the lower extremities		18	14	3			1	8	26
Fracture of femur	1	3	1	3					4
Fracture of patella		1	1					1	2
Fracture of leg, both bones	2	3	4	1					5
Fracture of tibia alone	1	4	2	2			1	1	6
Fracture of of fibula alone		6	5				1		6
Dislocation of the metatarsus and phalanges		1	1						1
AMPUTATIONS		1	1					1	2
Amputation of fingers		1	1					1	2

SOUTH ATLANTIC.

TOTAL CASES	112	1979	1481	408	35	74	93	5682	7773
General Diseases	58	1018	801	181	20	35	39	2613	3689
Small-pox								1	1
Cow-pox								45	45
Measles	1	2	2	1				2	5
Epidemic rose-rash		1	1					8	9
Dengue								2	2
Influenza								5	5
Mumps		1	1					3	4
Diphtheria								1	1
Simple continued fever		12	8	3		1		36	48
Enteric fever		14	8	2		2	2		14
Typho-malarial fever		1	1						1
Epidemic diarrhœa		6	6					2	8

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

SOUTH ATLANTIC.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Furnished office relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Dysentery	3	41	38	3		3		38	82
Malarial intermittent fever	10	301	295	6	1	2	7	789	1,105
Malarial remittent fever	8	170	160	4		8	6	85	263
Malarial cachexia		8	4	3			1	39	47
Phagedæna		2	2						2
Erysipelas:									
Simple		11	11					3	14
Phlegmonous		9	9					2	11
Pyæmia		1	1						1
Septicæmia								1	1
Syphilis:									
Primary	7	60	58	7	1		1	91	158
Secondary	7	82	29	54	2		4	291	380
Gonorrhœa	3	46	30	15	2	1	1	531	580
Scurvy		11	8	1			2	2	13
Alcoholism		2	2					4	6
Delirium tremens		2	2					3	5
Debility		16	11	2	3			87	103
Rheumatic fever	3	47	40	7			3	40	90
Rheumatism	8	94	65	31	2		4	394	496
Gout								1	1
Osteo-arthritis		1					1	1	2
Lipoma		2	2					2	4
Chondroma		1	1						1
Osteoma								1	1
Warts		1		1				5	6
Condyloma		3	2	1				8	11
Sarcoma		1				1			1
Carcinoma		1		1				1	2
Epithelioma		1					1	2	3
Scirrhus		2		1	1				2
Tubercle of lung	5	50		27	7	16	5	44	99
Acute miliary tuberculosis								1	1
Scrofula	2	11	3	7	1	1	1	16	29
Anæmia		2	1	1				20	22
Diabetes mellitus	1	2		3				1	4
Local Diseases	**49**	**722**	**488**	**187**	**14**	**34**	**48**	**2730**	**3501**
Diseases of the Nervous System	17	35	14	12	0	6	20	209	261
Inflammation:									
Of membranes of brain and spinal cord		1		1					1
Of the brain		1	1						1
Myelitis	1			1		1		8	11
Softening of brain or cord							1		1
Sclerosis								11	11
Locomotor ataxy								6	6
Hæmatoma, cystiform		1				1			1
Apoplexy		1				1			1
Hemiplegia		7		5			2	3	10
Local paralysis		1		1				4	5
Lead palsy		2	1	1					2
Anæsthesia								1	1
Spasm of muscle								3	3
Neuralgia		3	3					79	82
Facial	1	4	4				1	34	39
Sciatica		3	3					7	10
Vertigo								3	3
Megrim		2	1	1				16	18
Epilepsy				2				30	32
Hypochondriasis								2	2
Mania	11	4				3	12		15
Melancholia	4						4	1	5
Dementia								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Received during the year.	Discharged— Recovered.	Discharged— Improved.	Discharged— Not improved.	Died.	Remaining under treatment at the close of year.	Furnished office relief.	Total treated in hospital and dispensary.
Local Diseases.									
DISEASES OF THE EYE		16	5	9			2	63	79
Conjunctivitis:									
Catarrhal		3	2				1	29	3
Purulent		2	2					6	8
Chronic								3	3
Pterygium								1	1
Keratitis		3	1	2				6	9
Ulcer of cornea		1	...	1				1	2
Opacity of cornea		...						2	2
Inflammation of the sclerotic		1		1		..			1
Iritis		6		5			1	5	11
Cataract, lenticular								1	1
Night-blindness								4	4
Day-blindness								1	1
Blepharitis								2	2
Abscess of eyelid								1	1
Chalazion								1	1
DISEASES OF THE EAR		4	4					26	30
Inflammation of the external meatus:									
Acute		1	1					4	5
Abscess of the external meatus								2	2
Accumulation of wax								10	10
Inflammation of the middle ear		3	3			..		5	8
Ulceration of membrana tympani				...				2	2
Perforation of membrana tympani								2	2
Deafness								1	1
DISEASES OF THE NOSE	...	1	1			.	..	58	59
Epistaxis								4	4
Inflammation								4	39
Nasal catarrh								39	1
Ulceration		1	1					..	11
Ozæna								11	
DISEASES OF THE CIRCULATORY SYSTEM	2	27	2	19	2	5	1	72	101
Pericarditis		2		1	1				2
Endocarditis		2	1	1					
Valvular disease									
Aortic		7		5		2		2	
Mitral	1	5		4		2	..	36	
Degeneration of heart, fatty		..						2	
Angina pectoris		1		1				3	
Palpitation and irregular action of heart		2		2				18	
Aneurism of arteries	1	7		5	1	1	1	6	
Phlebitis		1	1						
Varix								5	
DISEASES OF THE RESPIRATORY SYSTEM	6	164	106	35	6	12	11	488	6
Laryngitis:									
Acute		2	2					6	
Chronic		1		1		..			
Bronchitis:									
Acute	1	62	49	11	1	1	1	278	34
Chronic	1	11	b	4	1		2	43	56
Catarrhal		6	6					91	97
Spasmodic asthma		8	4	4				6	14
Hæmoptysis of lung		4		2		1	1	8	12
Pneumonia	1	34	22	2		8	3	4	39
Cirrhosis of lung		4	1	1	1		1		4
Pneumonic phthisis:									
Acute		2			1		1	4	6
Chronic	2	10	1	6	1	2	2	24	36
Emphysema		1			1			4	5
Pleurisy:									
Acute	1	17	15	3				18	36
Chronic		2	1	1				2	4

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM	5	125	86	33	2	7	2	999	1,129
Ulcer of the lips		2	2					1	3
Stomatitis								7	7
Ulcerative stomatitis								2	2
Thrush								3	3
Caries of dentine and cementum								22	22
Inflammation of dental periosteum								1	1
Abscess of dental periosteum								6	6
Ulceration of gums and alveoli								1	1
Necrosis of the alveoli								1	1
Supernumerary teeth								1	1
Toothache								6	6
Ulcer of the tongue								1	1
Necrosis of palate		1	1					1	2
Sore throat		8	7	1				40	48
Quinsy		3	3					2	5
Follicular tonsilitis		5	3	2				33	38
Ulceration of fauces		1	1						1
Inflammation of salivary glands		2	2					1	3
Follicular inflammation of the pharynx								50	50
Post-pharyngeal abscess								1	1
Ulceration of pharynx								4	4
Inflammation of the stomach	1	2	2	1				19	22
Ulceration of the stomach		2		1	1				2
Dyspepsia		9	3	5	1			191	200
Gastrodynia		2	1	1					2
Pyrosis								1	1
Vomiting								1	1
Hemorrhage of the intestines								1	1
Catarrhal inflammation of the intestines		5	4	1				10	15
Enteritis								1	1
Typhlitis		2	1	1				4	6
Ulcer of the intestines		1		1				2	3
Obstruction of the intestines								2	2
Hernia	2	4	1	4		1		62	68
Tænia solium		3	2	1				1	4
Ascaris lumbricoides								1	1
Oxyuris vermicularis								1	1
Diarrhœa	1	31	26	4		2		186	218
Constipation								231	231
Colic		9	9					20	29
Abscess of the rectum								1	1
Piles:									
Internal		4	2	2				24	28
External		6	5				1	24	30
Fistula in ano		4	3	1				1	5
Fissure of the anus		1	1						1
Hypertrophy of the liver		1		1				14	15
Congestion of the liver		1		1				9	10
Hepatitis		3	1			1	1	3	6
Cirrhosis of liver	1	3		3		1			4
Jaundice		6	6					3	9
Inflammation of hepatic ducts and gall-bladder		1		1				2	3
Peritonitis		3		1		2			3
DISEASES OF THE LYMPHATIC SYSTEM	1	37	27	6			5	72	110
Hypertrophy of the spleen								4	4
Hypertrophy of lymph-glands								1	1
Inflammation of lymph-glands		23	16	3			4	48	71
Suppuration of lymph-glands	1	14	11	3			1	19	34
DISEASES OF THE THYROID BODY		1		1				1	2
Goitre		1		1				1	2

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

SOUTH ATLANTIC.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dis-
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE URINARY SYSTEM	3	22	13	10		2		65	[illegible]
Acute nephritis	2	4	1	5					6
Bright's disease		1				1		14	15
Calculus in kidney		2	1	1				2	4
Calculus in ureter		2	2						2
Hæmaturia		2	1	1				5	7
Hæmorrhage of bladder								1	1
Inflammation of bladder:									
Acute	1	7	5	3				10	18
Sub-acute		1	1					2	3
Chronic		1				1		5	6
Irritability of bladder								23	23
Retention of urine		2	2					2	4
Incontinence of urine								1	1
DISEASES OF THE GENERATIVE SYSTEM	7	128	97	34	2		2	335	470
Urethritis		2	1	1				1	3
Gleet								23	23
Stricture of urethra:									
Organic		22	9	12	1			35	57
Spasmodic		1	1					2	3
Urinary fistula		1		1					1
Recto-urethral fistula		1		1					1
Extravasation of urine		1	1						1
Impacted calculus of urethra								1	1
Acute inflammation of prostate gland								1	1
Chronic inflammation of prostate gland								2	2
Inflammation of glans of penis								16	16
Ulcer of penis	7	59	49	15			2	152	218
Phimosis		1	1					5	6
Paraphimosis		1	1						1
Priapism								1	1
Œdema of the scrotum								1	1
Hydrocele of spermatic cord								1	1
Varicocele		2		1	1			18	20
Neuralgia of spermatic cord								1	1
Hydrocele of tunica vaginalis		6	6					5	11
Inflammation of tunica vaginalis								1	1
Orchitis:									
Acute		14	13	1				19	33
Chronic		4	3	1				1	5
Epididymitis		11	10	1				21	32
Cyst of testicle		1	1						1
Spermatorrhœa								13	13
Impotence								11	11
Neuralgia of the testicle								2	2
Dysmenorrhœa								1	1
Monorrhagia		1	1					1	2
DISEASES OF THE ORGANS OF LOCOMOTION	3	20	15	6	1	1		22	45
Periostitis		7	7					5	12
Perichondritis								1	1
Necrosis		4	1	2	1			4	8
Synovitis:									
Acute		3	1	2				2	5
Chronic	1	3	4					1	5
Abscess of joints	1	1	1	1					2
Ankylosis								2	2
Dislocation of articular cartilage								1	1
Relaxation of ligaments								1	1
Psoas abscess	1					1			1
Exhaustion of muscles								1	1
Inflammation of tendons and fasciæ		1	1						1
Inflamed bursa								1	2
Bunion								2	1
Ganglion								1	1
Bursal tumor		1		1					

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE CONNECTIVE TISSUE	3	36	34	2	1	1	1	55	94
Œdema								1	1
Inflammation		6	5				1	16	22
Abscess	3	30	29	2	1	1		38	71
DISEASES OF THE SKIN	2	106	84	20			4	265	373
Erythema								1	1
Urticaria								11	11
Eczema		1					1	61	62
Impetigo								1	1
Ecthyma								1	1
Prurigo								2	2
Lichen								2	2
Psoriasis								3	3
Herpes		1	1					15	16
Zona								1	1
Pemphigus								1	1
Acne								1	1
Sycosis								1	1
Chilblain		2		2					2
Frostbite		32	29	3				14	46
Ulcer	2	28	21	8			1	51	81
Boil		13	10	2			1	53	66
Carbuncle		11	9	2				7	18
Whitlow		8	6	2				15	23
Onychia		2	2					4	6
Wen		1	1					2	3
Pruritus								3	3
Ringworm								2	2
Tinea versicolor								1	1
Itch		4	4					10	14
Malingerer		1					1	2	3
Undetermined		2	1	1					2
Poisons		6	6						16
Lead								1	1
Mercury		1	1					2	3
Alcohol		5	5					3	8
Rhus								2	2
Tobacco								1	1
Phosphoric acid								1	1
POISONED WOUNDS		2	2						2
Dead animal matter		1	1						1
Mineral substances		1	1						1
Injuries	5	231	184	40	1	5	6	329	565
GENERAL INJURIES		17	12	3		2		21	38
Burns and scalds		11	9			2		16	27
Effects of cold		2	1	1				1	3
Sunstroke		2	2					1	3
Multiple injury								2	2
Exhaustion		2		2				1	3
LOCAL INJURIES	5	214	172	37	1	3	6	308	527
Strain of muscles		2	2					12	14
Rupture of muscles		1	1						1
Rupture of tendon								2	2
Foreign body in subcutaneous tissue		1		1				1	2
Contusion of scalp		3	3					1	4
Scalp-wound:									
Bone not exposed		5	5					11	16
Bone exposed		1	1					2	3

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

SOUTH ATLANTIC.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Discharged— Improved.	Discharged— Not improved.	Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
Injuries.									
LOCAL INJURIES—Continued.									
Fracture of the vault of the skull		1	1					1	2
Concussion of brain		1				1			1
Contusion of face		3	3					3	6
Wound of face		5	5					8	13
Fracture of facial bones		1		1				1	2
Contusion of the eye		2	1	1				2	4
Foreign body in cornea or conjunctiva		1		1				3	4
Wound of eyelid		3	2	1				2	5
Wound of iris								1	1
Foreign body in external meatus								2	2
Foreign body in the pharynx								1	1
Contusion of the chest		11	10	1				12	23
Fracture of the ribs		4	1	2	1			2	6
Wound of parieties of chest		1	1					1	2
Penetrating wound of pleura or lung		3	1	2					3
Contusion of lung without wound		1	1						1
Contusion of back		4	4					10	14
Sprain of back		3	3					24	27
Wound of back		2	2						2
Contusion of abdomen	1	1	1	1				1	3
Contusion of pelvis		1	1					2	3
Wound of organs of generation		1		1					1
Contusion of testicle								2	2
Contusion of upper extremities	1	10	8	2			1	34	45
Sprain of the shoulder								3	3
Sprain of the elbow		1		1				1	2
Sprain of the wrist		6	6					10	16
Sprain of the fingers								3	3
Wound of the upper extremities	1	59	53	4		1	2	69	129
Fracture of the clavicle		1	1					1	2
Fracture of the humerus		3	2	1				3	6
Fracture of the radius		4	3	1					4
Fracture of the ulna		2	1	1				3	5
Fracture of both bones of forearm		3	3					1	4
Fracture of carpus, metacarpus, and phalanges		3	1	2				2	5
Dislocation of the clavicle		3	2	1					3
Dislocation of the humerus								1	1
Contusion of the lower extremities		23	18	3			2	33	56
Sprain of the knee		1	1					7	8
Sprain of the ankle	1	12	8	5				9	22
Sprain of the foot		2	2						2
Wound of the lower extremities		12	9	3				18	30
Fracture of femur	1	1		1		1			2
Fracture of leg, both bones		1	1					2	3
Fracture of tibia alone		2	1				1	1	3
Fracture of fibula alone		2	2						2
Dislocation of foot at the ankle		1	1						1

THE GULF.

TOTAL CASES	57	1631	1059	455	38	50	86	3543	5231
General Diseases	24	848	589	200	17	31	35	1586	2458
Cow-pox								1	1
Chicken-pox		2	2					2	4
Measles		1	1						1
Dengue		9	9					3	12
Typhus		1					1		1
Relapsing fever		1	1						1
Influenza								4	4

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Discharged— Improved.	Discharged— Not improved.	Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated and in hospital dispensary.
General Diseases.									
Mumps		3	3					1	4
Simple continued fever		1		1				2	3
Enteric fever	1	5	3	1		2		1	7
Typho-malarial fever	...	1	1	...				...	1
Epidemic diarrhœa		2	1	1			...	7	9
Dysentery	3	19	17	3	..	1	1	38	60
Malarial intermittent fever	10	307	282	18	2	5	10	556	872
Malarial remittent fever		178	150	10	1	8	9	48	226
Malarial cachexia	...	7	4	3				31	38
Phagedæna	1	3	2	2					4
Erysipelas:									
Simple		3	2	1				1	4
Phlegmonous		2	1	1					2
Sapticæmia		1					1		1
Syphilis:									
Primary		30	12	17	1			32	62
Secondary	6	86	2	85	2		3	184	276
Gonorrhœa		25	16	6	2		1	269	294
Alcoholism		8	8					7	15
Delirium tremens		3	2	1					3
Debility	1	4	4	1				20	35
Rheumatic fever	...	23	13	7	2		1	14	37
Rheumatism	1	77	46	27	1		4	294	372
Gout								1	1
Osteo-arthritis		1	1					1	2
Osteoma								1	1
Warts		3	2	1				6	9
Condyloma		1	1	...				4	5
Caricinoma:									
Epithelioma		2	1		1				2
Scirrhus		2		...	1	1			2
Tubercle of lung	1	33	...	13	3	14	4	52	86
Acute miliary tuberculosis		1			1	...			1
Scrofula		1		1				2	3
Anæmia		2	2					4	6
Local Diseases	**24**	**605**	**332**	**219**	**20**	**19**	**39**	**1704**	**2333**
DISEASES OF THE NERVOUS SYSTEM	3	32	13	10	3	1	8	102	137
Congestion of the brain		1				1		1	2
Inflammation of cerebral membranes		1	1						1
Myelitis		2					2	1	3
Neuritis		3	2	1				2	5
Apoplexy		2		2					2
Paralysis		1		1		...		1	2
Hemiplegia		2			1		1		2
Paraplegia	2			1			1	1	3
Local paralysis		1	1					1	2
Lead palsy		1		1					1
Spasm of muscle								2	2
Hyperæsthesia								2	2
Neuralgia		3	3					45	48
Facial		2	1	1				21	23
Sciatica		7	3	2			2	3	10
Vertigo								8	8
Megrim		1	1					5	6
Epilepsy	1	3	1		1		2	4	8
Hypochondriasis								4	4
Melancholia		1		1				1	2
Dementia		1			1				1
DISEASES OF THE EYE		8	5	3				38	46
Conjuctivitis:									
Catarrhal		4	3	1				24	28
Purulent								2	2
Chronic								2	2

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GULF.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE EYE—Continued.									
Iritis								5	5
Amaurosis		1		1					1
Neuralgia of eyeball								2	2
Blepharitis								1	1
Stye								2	2
Abscess of eyelid		1		1					1
Trichiasis		2	2						2
DISEASES OF THE EAR		1		1				16	17
Inflammation of the external meatus, chronic								1	1
Accumulation of wax								4	4
Inflammation of the middle ear		1		1				9	10
Deafness								2	2
DISEASES OF THE NOSE		1		1				30	31
Epistaxis								1	1
Nasal catarrh		1		1				28	29
Ozæna								1	1
DISEASES OF THE CIRCULATORY SYSTEM	2	19	1	13	4	2	1	47	68
Valvular diseases:									
Aortic		9		6	2	1		8	17
Mitral	1	7		6	1	1		17	25
Hypertrophy of heart								1	1
Inflammation of heart		1			1				1
Angina pectoris								2	2
Palpitation and irregular action of heart								12	12
Aneurism of arteries		1					1	3	4
Varix	1			1				4	5
Thrombosis of veins		1	1						1
DISEASES OF THE RESPIRATORY SYSTEM	1	104	51	31	9	10	4	363	468
Hay-asthma								1	1
Laryngitis:									
Chronic		1		1					1
Catarrhal								3	3
Bronchitis:									
Acute		33	22	9	1	1		137	170
Chronic		8		5	3			64	72
Catarrhal								105	105
Spasmodic asthma		2		1			1	11	13
Hæmoptysis of lung		1	1					3	4
Pneumonia		31	23	1		6	1	4	35
Abscess of lung		1		1					1
Cirrhosis of lung		4		4					4
Pneumonia phthisis:									
Acute		7	1	1	3	1	1		7
Chronic	1	10		7	1	2	1	22	33
Emphysema								1	1
Pleurisy:									
Acute		4	4					9	13
Chronic		2		1	1			1	3
Empyema								2	2
DISEASES OF THE DIGESTIVE SYSTEM	4	117	80	32	1	2	6	540	661
Stomatitis								4	4
Abscess of the antrum		2	1	1					2
Caries of dentine and cementum								34	34
Inflammation of dental periosteum								1	1
Abscess of dental periosteum		1	1					6	7
Atrophy of gums								1	1
Toothache								5	5
Inflammation of the tongue								1	1
Ulcer of the tongue		1		1				1	2

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Cont'd.									
Elongated uvula								2	2
Relaxed throat								1	1
Sore throat								19	19
Quinsy		1	1					3	4
Follicular tonsilitis		8	7	1				18	26
Ulceration of fauces								7	7
Abscess of salivary glands		1	1						1
Salivation								1	1
Follicular inflammation of the pharynx		1		1				26	27
Post-pharyngeal abscess		2	2						2
Inflammation of the stomach		9	4	4			1	6	15
Ulceration of the stomach		3		2			1	1	4
Dyspepsia		14	9	5				119	133
Gastrodynia		1	1					5	6
Pyrosis								2	2
Inflammation of intestines, catarrhal		1	1						1
Enteritis	1	1	1	1				1	3
Obstruction of the intestines		1	1						1
Hernia		6	1	5				51	57
Fistula of intestines		1		1					1
Tænia solium		2	1	1				1	3
Diarrhœa	1	33	27	3	1		3	88	122
Constipation		2	2					95	97
Colic		1	1					6	7
Hæmorrhage of the rectum		1		1				1	2
Abscess of the rectum		2	2						2
Abscess of the anus		1	1						1
Piles :									
Internal		4	3	1				9	13
External		1		1				9	10
Fistula in ano	1	2	1	2				3	6
Pruritus ani								1	1
Hypertrophy of the liver		2	2					1	3
Congestion of the liver	1	2	3					3	6
Hepatitis		3	2				1	1	4
Cirrhosis of liver		2		1		1			2
Abscess of liver		2	1			1			2
Jaundice		3	3					6	9
Gallstones								1	1
DISEASES OF THE LYMPHATIC SYSTEM	3	39	19	22			1	47	89
Hypertrophy of the spleen		1		1					1
Induration and enlargement from ague								2	2
Congestion of the spleen	2	2	1	3					4
Splenitis		1	1					1	2
Hypertrophy of lymph-glands								2	2
Inflammation of lymph-glands		11	6	5				23	34
Suppuration of lymph-glands	1	24	11	13			1	19	44
DISEASES OF THE URINARY SYSTEM	1	29	5	17	1	2	5	47	77
Acute nephritis		3	1	2				4	7
Bright's disease	1	20	1	13	1	2	4	15	36
Pyelitis		1		1					1
Abscess of kidney		1					1		1
Diabetes insipidus		1		1				1	2
Suppression of urine								1	1
Hæmaturia		1	1					1	2
Inflammation of bladder:									
Acute		1	1					8	9
Chronic								3	3
Calculus of bladder								1	1
Irritability of bladder								5	5
Neuralgia of neck of bladder								3	3
Retention of urine		1	1					4	5
Incontinence of urine								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Discharged— Improved.	Discharged— Not improved.	Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dis- pensary.
Local Diseases.									
DISEASES OF THE GENERATIVE SYSTEM	7	134	87	46		1	7	187	28
Urethritis		1		1				1	2
Gleet								13	13
Ulcer of the urethra								1	1
Stricture of urethra:									
Organic	1	32	21	9		1	2	52	85
Traumatic		2	1	1				1	3
Spasmodic	1	1	1	1				2	4
Urinary fistula		2		1			1	1	3
Acute inflammation of prostate gland	1	2	1	2				1	4
Chronic inflammation of prostate gland								1	1
Œdema of the penis								1	1
Inflammation of the penis		1	1						1
Inflammation of glans of penis		2	2					8	10
Ulcer of penis	2	52	24	27			3	49	103
Phimosis		1	1					4	5
Paraphimosis		3	3						3
Inflammation of the scrotum								1	1
Hydrocele of spermatic cord		2	1				1	8	10
Varicocele								1	1
Neuralgia of spermatic cord								2	2
Hydrocele of tunica vaginalis	1	1		2				12	14
Orchitis:									
Acute	1	17	17	1				8	26
Chronic		1	1					4	5
Epididymitis		14	13	1				7	21
Spermatorrhœa								1	1
Impotence								2	2
Neuralgia of the testicle								4	4
Catarrh of the vagina								1	1
Metrorrhagia								1	1
DISEASES OF THE ORGANS OF LOCOMOTION	1	19	14	4		1	1	15	35
Periostitis		2	2					1	3
Necrosis	1	3	2	1		1		4	8
Synovitis:									
Acute		8	6	2					8
Chronic		2	1				1	1	3
Ankylosis		1	1					1	2
Inflammation of tendons		1	1					1	2
Adhesion of tendons								1	1
Inflamed bursa								1	1
Thecal abscess		2	1	1				1	2
Ganglion								2	2
Bursal tumor								2	2
DISEASES OF THE CONNECTIVE TISSUE		20	15	4			1	42	62
Œdema		1		1					1
Inflammation		12	9	2			1	20	32
Abscess		7	6	1				22	29
DISEASES OF THE SKIN	2	82	42	35	2		5	230	314
Urticaria								16	16
Eczema	1	3	3	1				27	31
Ecthyma		1	1					5	6
Psoriasis								4	4
Miliaria								2	2
Herpes								8	8
Zona								1	1
Acne								1	1
Chloasma								1	1
Alopecia								1	1
Chilblain								19	19
Frostbite		11	6	5				1	12
Ulcer	1	40	12	24	1		4	71	112

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE SKIN—Continued.									
Boil		6	5	1				28	34
Carbuncle		5	3	1			1	2	7
Whitlow		11	9	1	1			18	29
Onychia		1	1					2	3
Lupus		1	1					1	2
Wen								8	8
Pruritus								2	2
Ringworm		1	1					7	8
Favus		1		1					1
Tinea versicolor		1		1				3	4
Itch								2	2
Poisons		2	2					4	6
Lead								1	1
Alcohol		2	2					2	4
Iodine								1	1
POISONED WOUNDS								3	3
Venomous animals								2	2
Vegetable substances								1	1
Injuries	9	176	136	36	1		12	246	431
GENERAL INJURIES		16	15				1	13	29
Burns and scalds		12	11				1	4	16
Effects of cold								7	7
Sunstroke		1	1					2	3
Multiple injury		1	1						1
Exhaustion		2	2						2
LOCAL INJURIES	9	159	120	36	1		11	233	401
Rupture of muscles								3	3
Strain of muscles								5	5
Contusion of scalp	1	1	2						2
Scalp-wound:									
Bone not exposed		7	6	1				12	19
Bone exposed		4	3	1				6	10
Contusion of skull		1	1						1
Concussion of brain		1		1					1
Contusion of face		1	1					4	5
Wound of face		4	4					7	11
Fracture of facial bones	1	1		2				1	3
Contusion of the eye		1					1	2	3
Foreign body in cornea or conjunctiva								6	6
Wound of eyelid								1	1
Wound of neck								1	1
Contusion of the chest		6	4	2				10	16
Fracture of the ribs		9	5	3			1	1	10
Wound of parietes of chest								1	1
Perforating wound of chest		1					1		1
Contusion of back	1	12	9	4				27	40
Sprain of back	1	4	5					12	17
Wound of back	1	1	1				1	1	3
Concussion of cord		2	1	1				1	3
Contusion of abdomen		1	1					1	2
Wound of parietes of abdomen		1	1					3	4
Contusion of pelvis		1	1					1	2
Contusion of upper extremities		2	1	1				13	15
Sprain of the shoulder								1	1
Sprain of the wrist		1		1				1	2
Sprain of the fingers								1	1
Wound of the upper extremities		23	16	4			3	47	70
Wound of joint, upper extremities								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Fracture of the scapula		1	1					1	2
Fracture of the humerus		1	1						1
Fracture of the radius		2	2					3	5
Fracture of the ulna		1		1				2	3
Fracture of both bones of forearm		1					1		1
Fracture of carpus, metacarpus, and phalanges								1	1
Dislocation of the clavicle		1	1					1	2
Dislocation of the humerus		3	3					1	4
Dislocation of the phalanges of thumb								1	1
Contusion of the lower extremities	1	19	16	4				14	34
Sprain of the hip								2	2
Sprain of the knee		2		2				7	9
Sprain of the ankle		3	3					3	6
Sprain of the foot		1		1					1
Wound of the lower extremities	1	23	19	4			1	25	49
Wound of joint, lower extremities		2	2						2
Fracture of femur		1	1						1
Fracture of cervix femoris		1					1		1
Fracture of leg, both bones	1	5	4	2				1	7
Fracture of tibia alone	1				1				1
Fracture of fibula alone		2	1	1					2
Fracture of tarsus		1					1		1
Fracture of metatarsus		2	2					1	3
Dislocation of the foot at the ankle		1	1						1
Dislocation of the astragalus		1	1						1
AMPUTATIONS		1	1						1
Amputation of arm		1	1						1

THE OHIO.

TOTAL CASES	79	1300	947	290	35	42	65	4026	5405
General Diseases	29	568	396	137	15	20	29	1770	2367
Measles		1	1					3	4
Epidemic rose-rash		1	1					1	2
Mumps		3	3						3
Cerebro-spinal fever		2	1			1			2
Simple continued fever		2	2						2
Enteric fever	2	25	17	1		7	2		27
Epidemic diarrhœa								3	3
Dysentery	2	18	14	3		2	1	14	34
Malarial intermittent fever	1	170	153	9	1	2	6	420	591
Malarial remittent fever	1	26	23	1			3	34	61
Malarial cachexia		11	10	1				15	26
Phagedaena		1		1					1
Erysipelas, simple		4	3	1				6	10
Syphilis:									
Primary	1	29	25	4			1	83	113
Secondary	4	67	15	47	6		3	252	323
Gonorrhœa	1	23	18	5			1	410	434
Alcoholism		4	3		1			5	9
Debility	2	2	2	2				46	50
Rheumatic fever	3	29	25	6		1		20	52
Rheumatism	6	103	79	21	3		6	355	464
Osteo-arthritis		1					1	2	3
Fibroma								1	1
Lipoma								1	1
Myxoma								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Osteoma								2	2
Warts		1	1					9	10
Condyloma								5	5
Carcinoma:									
Of the rectum	1					1			1
Epithelioma		1		1					1
Medullary								1	1
Cylindroid		1				1			1
Tubercle of lung	3	34		26	4	5	2	63	100
Acute miliary tuberculosis		2		2					2
Scrofula	2	7		6			3	11	20
Anæmia								7	7
Local Diseases	37	540	376	135	17	22	27	2064	2641
DISEASES OF THE NERVOUS SYSTEM	4	22	11	5	5	3	2	80	106
Inflammation:									
Of membranes of brain and spinal cord		1			1				1
Of cerebral membranes								5	5
Locomotor ataxy	2	1		1	2			2	5
Hemiplegia	2	3		1	1	1	2	1	6
Local paralysis								4	4
Spasm of muscle								5	5
Wry-neck		1		1					1
Neuralgia		3	3					27	30
Facial		6	6					12	18
Sciatica		2	2					13	15
Vertigo								2	2
Megrim								2	2
Epilepsy								5	5
Hypochondriasis								2	2
Mania		3		1	1	1			3
Dementia		1		1					1
General paralysis of the insane		1				1			1
DISEASES OF THE EYE	1	8	2	5			2	30	39
Conjunctivitis:									
Catarrhal		1	1					19	20
Granular	1	2		1			2	3	6
Pterygium		1	1						1
Ulcer of cornea		1		1					1
Iritis		1		1				2	3
Amaurosis		1		1					1
Abscess of lachrymal gland		1		1				3	4
Blepharitis								1	1
Stye								1	1
Chalazion								1	1
DISEASES OF THE EAR		2	1	1				24	26
Acute		1	1					6	7
Abscess of the external meatus		1		1				1	2
Accumulation of wax								5	5
Inflammation of the middle ear								8	8
Ulceration of membrana tympani								1	1
Perforation of membrana tympani								2	2
Deafness								1	1
DISEASES OF THE NOSE		1		1				39	40
Nasal catarrh		1		1				31	32
Ulceration								3	3
Ozæna								5	5
DISEASES OF THE CIRCULATORY SYSTEM	1	15	2	9		5		24	40
Endocarditis		2	1	1				5	7

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dis-
Local Diseases.									
DISEASES OF CIRCULATORY SYSTEM—Cont'd.									
Valvular disease:									
Aortic		4		2		2		3	7
Mitral	1	3	1			3			4
Hypertrophy of heart		1		1				1	2
Palpitation and irregular action of heart								3	3
Phlebitis								1	1
Varix		5		5				11	16
DISEASES OF THE RESPIRATORY SYSTEM.	5	91	59	23	5	6	3	393	489
Laryngitis, acute		1	1					8	9
Bronchitis:									
Acute	2	41	34	8			1	254	297
Chronic	1	3	2	2				16	20
Catarrhal		3	2	1				32	35
Spasmodic asthma								3	3
Hæmoptysis of lung		1	1					3	4
Pneumonia	2	14	11		3	2		2	15
Pnuemonic phthisis:									
Acute		3		1		2		9	12
Chronic		15		11	2	1	1	43	58
Pleurisy:									
Acute		10		8		1	1	22	33
Chronic								1	1
DISEASES OF THE DIGESTIVE SYSTEM	7	131	112	18	1	3	4	653	791
Ulcer of the lips								2	2
Stomatitis								3	3
Abscess of the antrum								1	1
Caries of dentine and cementum								15	15
Abscess of dental periosteum		1	1					4	5
Inflammation of gums and alveoli								1	1
Necrosis of the alveoli								1	1
Toothache								1	1
Ulcer of the tongue								1	1
Sore throat		3	3					39	42
Quinsy		1	1					3	4
Follicular tonsilitis		9	9					20	29
Ulceration of fauces		1	1					2	3
Salivation								1	1
Follicular inflammation of the pharynx		1	1					47	48
Inflammation of the stomach		3	3					20	23
Dyspepsia		5	2	1	1		1	119	124
Pyrosis								1	1
Hemorrhage of the intestines		1	1						1
Inflammation of intestines, catarrhal		4	2	1			1	7	11
Enteritis		3	3					3	6
Typhlitis		1	1						1
Hernia		5	2	3				44	49
Tænia mediocanellata								2	2
Diarrhœa	5	64	64	3			2	142	211
Constipation		3	3					63	66
Colic								15	15
Abscess of the rectum		1	1					1	2
Ulceration of the rectum								2	2
Piles:									
Internal	1	3	2	2				26	30
External		4	2	2				22	26
Prolapsus of the rectum		2	2						2
Fistula in ano		1	1					5	6
Fissure of the anus		1		1				6	7
Pruritus ani								1	1
Hypertrophy of the liver		5	3	2				27	32
Hepatitis		4	2	2					4
Perihepatitis								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF DIGESTIVE SYSTEM—Continued.									
Cirrhosis of liver		2				2			2
Lardaceous liver								1	1
Jaundice	1	3	2	1		1		3	7
Peritonitis								1	1
DISEASES OF THE LYMPHATIC SYSTEM		34	27	5	1		1	46	80
Hypertrophy of the spleen		2		2					2
Congestion of the spleen								2	2
Hypertrophy of lymph-glands		1			1			10	11
Inflammation of lymph-glands		13	12				1	11	24
Suppuration of lymph-glands		18	15	3				23	41
DISEASES OF THE URINARY SYSTEM		8	3	4			1	58	66
Acute nephritis								6	6
Diabetes insipidus								2	2
Inflammation of bladder:									
Acute		2	1				1	37	39
Chronic		5	2	3				10	15
Calculus of bladder		1		1					1
Irritability of bladder								3	3
DISEASES OF THE GENERATIVE SYSTEM	12	135	94	43	3	1	6	416	563
Urethritis		1	1					7	8
Gleet		1		1				50	51
Urinary abscess		1		1					1
Ulcer of the urethra								5	5
Stricture of urethra:									
Organic	2	16	5	10	2		1	61	79
Spasmodic		1	1					1	2
Urinary fistula								1	1
Hypertrophy of prostate gland								7	7
Acute inflammation of prostate gland								1	1
Inflammation of glans of penis								26	26
Ulcer of penis	8	91	65	29			5	184	283
Phimosis		2	1		1			3	5
Paraphimosis		1				1		2	3
Neuralgia of spermatic cord		1	1					1	2
Varicocele		1	1					13	14
Hydrocele of tunica vaginalis								5	5
Orchitis:									
Acute		9	8	1				13	22
Chronic								3	3
Epididymitis	2	9	11					13	24
Spermatorrhœa								5	5
Impotence								8	8
Pelvic cellulitis		1		1					1
Monorrhagia								4	4
Leucorrhœa								1	1
Hypertrophy of the female breast, glandular								2	2
DISEASE OF THE ORGANS OF LOCOMOTION	2	14	9	5			2	21	37
Ostitis								1	1
Periostitis		1		1				1	2
Caries	1	1		1			1	1	3
Necrosis		1	1					2	3
Ununited fracture or false joint		1		1					1
Synovitis:									
Acute	1	3	3	1				3	7
Chronic								3	3
Abscess of joints		3	1	1			1	1	4
Dislocation of articular cartilage								1	1
Inflammation of muscles		2	2					1	3
Abscess of muscles		1	1						1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF ORGANS OF LOCOMOTION—Cont'd.									
Inflammation of tendons		1	1					3	4
Adhesion of tendons								1	1
Inflamed bursa								3	3
DISEASES OF THE CONNECTIVE TISSUE	3	22	18	1	1	3	2	34	59
Œdema	1	3			1	3			4
Inflammation								1	1
Abscess	2	19	18	1			2	29	50
Undue formation of fat								4	4
DISEASES OF THE SKIN	2	57	38	15	1	1	4	246	305
Erythema								2	2
Urticaria								5	5
Eczema		4	3	1				32	36
Rupia								4	4
Pityriasis								1	1
Lichen								1	1
Psoriasis								4	4
Herpes								15	15
Acne								17	17
Chilblain		3	3						3
Frostbite	1	14	12	2			1	5	20
Ulcer		24	10	11	1		2	71	95
Fissures								4	4
Boil		4	3				1	27	31
Carbuncle		2	2					5	7
Whitlow	1	5	5	1				11	17
Onychia								4	4
Pruritus								9	9
Ringworm								1	1
Tinea versicolor								2	2
Itch								22	22
Phthiriasis								4	4
Undetermined		1				1			1
Poisons		11	9		1		1	8	19
Lead		2	1				1		2
Alcohol		9	8		1			5	14
Rhus								3	3
Injuries	13	181	166	18	2		8	184	378
GENERAL INJURIES		14	10	2	2			8	22
Burns and scalds		5	4	1				8	13
Effects of cold		3	3						3
Sunstroke		5	2	1	2				5
Multiple injury		1	1						1
LOCAL INJURIES	13	167	156	16			8	176	356
Foreign body in subcutaneous tissue		1	1						1
Contusion of scalp								1	1
Scalp-wound:									
Bone not exposed		8	8					8	16
Bone exposed		4	4					1	5
Concussion of brain		2	1	1					2
Contusion of face		2	2					3	5
Wound of face		9	9					3	12
Fracture of facial bones	1		1						1
Contusion of the eye								1	1
Foreign body in cornea or conjunctiva								7	7
Foreign body in external meatus								1	1
Contusion of soft parts of neck		1	1						1
Wound of neck								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Contusion of the chest		5	5					8	13
Fracture of the ribs		1	1						1
Wound of parietes of chest		1	1						1
Contusion of back	2	7	9					11	20
Sprain of back		6	5	1				8	14
Wound of back	1	3	4						4
Contusion of abdomen		3	3					1	4
Wound of parietes of abdomen		4	2	1			1		4
Wound of organs of generation								6	6
Contusion of testicle								1	1
Contusion of upper extremities	1	11	9	3				26	38
Sprain of the shoulder		1	1						1
Sprain of the wrist		2	2					5	7
Wound of the upper extremities	1	26	21	5			1	38	65
Fracture of the clavicle		3	3					1	4
Fracture of the humerus		1	1						1
Fracture of the radius		1	1					3	4
Fracture of carpus, metacarpus, and phalanges		2	1	1				3	5
Dislocation of the humerus		2	2						2
Dislocation of the phalanges of fingers								1	1
Contusion of the lower extremities	3	33	31	2			3	18	54
Sprain of the hip		1	1						1
Sprain of the knee		2	2					7	9
Sprain of the ankle	2	8	6	2			2	5	15
Sprain of the foot		1	1					2	3
Wound of the lower extremities		11	10				1	3	14
Fracture of femur		1	1						1
Fracture of leg, both bones	2	1	3					1	4
Fracture of tibia alone		1	1					1	2
Fracture of fibula alone		2	2					1	3

THE MISSISSIPPI.

TOTAL CASES	95	1375	1049	289	20	41	71	2380	3850
General Diseases	43	656	481	158	11	17	32	1281	1980
Cow-pox								1	1
Epidemic rose-rash		2	1	1					2
Dengue		1	1						1
Mumps	1	2	3					1	4
Simple continued fever		1	1						1
Enteric fever	1	14	9	2		4			15
Epidemic diarrhœa		1	1					2	3
Dysentery	1	33	32			1	1	42	76
Malarial intermittent fever	10	149	148	5	1		5	310	469
Malarial remittent fever	8	126	130	1		1	2	108	242
Malarial cachexia								3	3
Phagedæna		3	2	1				2	5
Erysipelas:									
Simple								2	2
Phlegmonous		2	1			1			2
Pyæmia		1	1						1
Syphilis:									
Primary	1	31	25	3			4	62	94
Secondary	5	87	25	62	2	1	2	215	307
Gonorrhœa	1	34	23	9			3	249	284
Alcoholism		3	1	2				4	7
Delirium tremens		6	1	2	1	1	1		6
Debility		2	1				1	3	5

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE MISSISSIPPI.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Rheumatic fever	2	10	10	2				3	15
Rheumatism	8	110	65	47	1		5	207	325
Osteo-arthritis		1		1					1
Dermoid cyst								1	1
Warts								7	7
Condyloma								9	9
Carcinoma		1		1					1
Epithelioma		1		1				2	3
Tubercle of lungs	4	32		15	6	7	8	31	67
Scrofula	1	2		3					3
Anæmia								17	17
Leucocythæmia		1				1			1
Local Diseases	38	512	387	106	8	21	28	946	1496
DISEASES OF THE NERVOUS SYSTEM	9	31	25	9	2	2	2	87	127
Congestion, cerebral								1	1
Inflammation of cerebral membranes		1	1						1
Myelitis		1					1		1
Locomotor ataxy	2	1			2	1			3
Paralysis		1		1					1
Hemiplegia		1					1		1
Local paralysis		1		1				4	5
Lead palsy		1	1					2	3
Wry-neck								1	1
Neuralgia	3	15	16	2				69	87
Facial		1	1					8	9
Sciatica	3	6	6	3					9
Vertigo	1			1					1
Tetanus		1				1			1
Hypochondriasis								2	2
Mania		1		1					1
DISEASES OF THE EYE		11	8	1			2	28	39
Conjunctivitis:									
Catarrhal		2	2					23	25
Purulent		3	3						3
Chronic								2	2
Iritis		5	3				2	1	6
Glaucoma		1		1					1
Atrophy of optic disk								2	2
DISEASES OF THE EAR		6	4	2				7	13
Inflammation of the external meatus:									
Acute		1	1					3	4
Chronic								1	1
Abscess of the external meatus		2	2					1	3
Inflammation of the middle ear		2		2				2	4
Ulceration of membrana tympani		1	1						1
DISEASES OF THE NOSE								19	19
Epistaxis								1	1
Nasal catarrh								15	15
Ozæna								3	3
DISEASES OF THE CIRCULATORY SYSTEM		13	2	9	1		1	12	25
Endocarditis		1		1					1
Valvular disease:									
Aortic		1					1	1	2
Mitral								1	1
Hypertrophy of heart								1	1
Angina pectoris								1	1
Palpitation and irregular action of heart		3	1	2				6	9
Aneurism of arteries		4	1	2	1				4
Varix		4		4				2	6

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE MISSISSIPPI.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
Diseases of the Respiratory System	3	101	66	24	1	11	2	160	264
Laryngitis :									
Acute								1	1
Chronic								4	4
Bronchitis :									
Acute		31	26	3		2		79	110
Chronic	2	18	3	16	1			19	39
Catarrhal								34	34
Spasmodic asthma		3	1	2				10	13
Hæmoptysis of lung		2	1	1					2
Pneumonia	1	30	22	1		8		1	32
Pneumonic phthisis:									
Acute		1				1			1
Chronic		1					1	5	6
Emphysema								1	1
Pleurisy :									
Acute		14	12	1			1	4	18
Chronic		1	1					2	3
Diseases of the Digestive System	5	97	80	7	1	6	8	266	368
Stomatitis								2	2
Caries of dentine and cementum								6	6
Inflammation of gums and alveoli								1	1
Elongated uvula								1	1
Relaxed throat								3	3
Sore throat								10	10
Quinsy		2	2					2	4
Follicular tonsilitis		1	1					8	9
Salivation		1	1						1
Follicular inflammation of the pharynx								10	10
Hæmorrhage of the stomach		1	1						1
Inflammation of the stomach		1		1				4	5
Dyspepsia		7	7					30	37
Gastrodynia	2		2						2
Ulcer of the intestines								1	1
Obstruction of the intestines		1	1						1
Hernia		3	1			1	1	35	38
Tænia solium		2	2					2	4
Diarrhœa	2	56	49	2		4	3	63	121
Constipation		3	2				1	41	44
Colic		3	3					11	14
Piles :									
Internal		4	1	1	1		1	7	11
External		4	4					11	15
Fistula in ano		2	2					1	3
Fissure of the anus		1		1					1
Pruritus ani								1	1
Hypertrophy of the liver								3	3
Congestion of the liver								11	11
Hepatitis		2		1			1		2
Cirrhosis of liver	1	2		1		1	1		3
Jaundice		1	1					2	3
Diseases of the Lymphatic System	4	44	36	10			2	32	80
Hypertrophy of the spleen		1	1					3	4
Hypertrophy of lymph-glands								1	1
Inflammation of lymph-vessels		1		1					1
Inflammation of lymph-glands	2	11	9	4				17	30
Suppuration of lymph-glands	2	31	26	5			2	11	44
Diseases of the Urinary System	2	18	10	5	1	2	2	28	48
Acute nephritis	1	5	1	4	1			3	9
Bright's disease	1	8	5			2	2	2	11
Calculus in ureter		1	1						1
Diabetes insipidus								1	1
Hæmaturia		1	1						1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE MISSISSIPPI.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Discharged— Improved.	Discharged— Not improved.	Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
Local Diseases.									
DISEASES OF THE URINARY SYSTEM—Cont'd.									
Inflammation of bladder:									
Acute		1	1					5	6
Chronic								1	1
Irritability of bladder		1		1				12	12
Retention of urine		1	1					1	2
Incontinence of urine								3	3
DISEASES OF THE GENERATIVE SYSTEM	8	84	70	21	1			186	278
Urethritis		1	1					1	2
Gleet								18	18
Stricture of urethra, organic		15	10	5				16	31
Urinary fistula	1	1		2				2	4
Extravasation of urine		1	1						1
Hypertrophy of prostate gland								1	1
Œdema of the penis		1	1						1
Inflammation of glans of penis								9	9
Ulcer of penis	5	37	29	13				106	143
Phimosis	1	8	8	1				1	10
Paraphimosis								1	1
Varicocele		1	1					6	7
Hydrocele of tunica vaginalis		1	1					2	3
Ochitis acute	1	10	11					14	25
Chronic		1	1					3	4
Epididymitis		4	4					1	5
Abscess of testicle		1	1						1
Cyst of testicle		1			1				1
Spermatorrhœa								3	3
Impotence								1	1
Neuralgia of testicle		1	1						1
Dysmenorrhœa								1	1
DISEASES OF THE ORGANS OF LOCOMOTION		16	8	4			4	10	26
Periostitis		4	2	1			1	1	5
Necrosis		2		1			1	1	3
Synovitis, acute		7	4	1			2	2	9
Chronic		1		1				3	4
Abscess of muscles		1	1						1
Inflammation of tendons								2	2
Adhesion of tendons								1	1
Thecal abscess		1	1						
DISEASES OF THE CONNECTIVE TISSUE	2	28	26	3			1	12	42
Inflammation		3	2				1	1	4
Abscess	2	25	24	3				11	38
DISEASES OF THE SKIN	5	63	52	11	1		4	99	167
Erythema								1	1
Urticaria								5	5
Eczema	1		1					9	10
Impetigo								2	2
Prurigo								1	1
Psoriasis		2		2				4	6
Herpes								5	5
Acne								3	3
Sycosis								2	2
Melasma								1	1
Chloasma								1	1
Frostbite		20	18	2				9	29
Ulcer	4	30	24	7			3	26	60
Boil		2	2					8	10
Carbuncle		1	1					1	2
Whitlow		5	4				1	2	7
Onychia		2	2						2
Lupus								5	5

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE MISSISSIPPI.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE SKIN—Continued.									
Wen								1	1
Pruritus								1	1
Ringworm								3	3
Tinea versicolor								1	1
Itch								4	4
Phthiriasis								2	2
Irritation by poison vine								2	2
Malingerer		1			1				1
Poisons		6	6					6	12
Croton oil								1	1
Alcohol		6	6					5	11
POISONED WOUNDS								1	1
Venomous animals								1	1
Injuries	14	201	175	25	1	3	11	146	361
GENERAL INJURIES		11	10	1				9	20
Burns and scalds		7	7					9	16
Sunstroke		4	3	1					4
LOCAL INJURIES	14	190	165	24	1	3	11	137	341
Foreign body in subcutaneous tissue								1	1
Scalp-wound:									
Bone not exposed		7	6				1	10	17
Bone exposed		7	6	1				2	9
Fracture of the base of the skull		1				1			1
Concussion of brain								1	1
Contusion of face		2	1				1	2	4
Wound of face		2	2					6	8
Fracture of facial bones	1		1						1
Foreign body in cornea or conjunctiva								4	4
Wound of eyelid		1	1						1
Contusion of soft parts of neck		1	1						1
Contusion of the chest		5	5					11	16
Fracture of the ribs		4	4						4
Wound of parietes of chest		1	1					1	2
Perforating wound of chest		3	2	1					3
Contusion of back	1	6	6	1				7	14
Sprain of back		9	8				1	6	15
Wound of back	1	5	6						6
Compression of cord without fracture	1	2	2	1				1	4
Contusion of abdomen		2	2					2	4
Wound of parietes of abdomen		7	6			1			7
Wound of organs of generation	1		1						1
Contusion of upper extremities	1	9	8	2				8	18
Sprain of the shoulder								1	1
Sprain of the elbow								2	2
Sprain of the wrist	1	4	3	2				2	7
Wound of the upper extremities	2	27	22	5			2	30	59
Fracture of the clavicle		2	1	1					2
Fracture of the scapula								1	1
Fracture of the radius		2	1	1				1	3
Fracture of the ulna								1	1
Fracture of both bones of forearm		1		1					1
Fracture of carpus, metacarpus, and phalanges		2	2					7	9
Dislocation of the humerus		2	2						2
Contusion of the lower extremities	1	28	24	2	1		2	12	41
Sprain of the hip								2	2
Sprain of the knee		2	2					3	5
Sprain of the ankle		21	19	2				5	26

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE MISSISSIPPI.

DISEASES.	NUMBER OF CASES.									
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dis-	[illegible]
			Recovered.	Improved.	Not improved.					
Injuries.										
LOCAL INJURIES—Continued.										
Wound of the lower extremities	1	12	10	3				8	[illegible]	1
Wound of joint, lower extremities		1					1			
Fracture of femur		1				1				
Fracture of cervix femoris		1					1			
Fracture of leg, both bones	1	1	2							
Fracture of tibia alone		2	1	1						
Fracture of fibula alone	1	4	4				1			
Fracture of tarsus	1						1			
Fracture of metatarsus		2	2							
Dislocation of the foot at the ankle		1	1							

THE GREAT LAKES.

TOTAL CASES	144	1884	1256	546	54	48	124	7795	982	2
General Diseases	48	749	460	248	20	22	47	3564	43	61
Cow-pox								164	1	64
Measles	1	1	1				1	2		4
Scarlet fever		1	1							1
Influenza		1	1					25		26
Whooping-cough								2		2
Mumps								4		4
Diphtheria								2		2
Simple continued fever		1	1					8		9
Febricula	1	5	5		1			11		17
Enteric fever	4	58	46	1		10	5	1		63
Typho-malarial fever	1	2	1	1		1		1		4
Epidemic diarrhœa		2	2					12		14
Dysentery	4	20	21	2	1			22		46
Malarial intermittent fever	4	75	69	6			4	290		369
Malarial remittent fever	2	40	37	3	1	1		103		145
Malarial cachexia								39		39
Erysipelas:										
Simple		6	6					5		11
Phlegmonous		4	1	2		1				4
Pyæmia		1				1				1
Syphilis:										
Primary	2	28	20	9			1	98		128
Secondary	9	140	36	99	1	2	11	837		986
Gonorrhœa	2	30	17	10	1		4	910		942
Alcoholism		6	5	1				11		17
Delirium tremens		17	16			1		2		19
Atresia congenital								1		1
Debility	1	8	2	4	1		2	109		118
Rheumatic fever	5	42	31	14			2	24		71
Rheumatism	9	196	134	54	6		11	781		986
Osteo-arthritis		2	1	1						2
Fibroma								3		3
Lipoma								2		2
Warts								13		13
Condyloma		3	2	1				3		6
Sarcoma		1		1						1
Epithelioma		7	3	1	2		1			7
Medullary		2	1		1					2
Tubercle of lung	3	46		36	5	5	3	67		116
Acute miliary tuberculosis		1		1						1
Scrofula		3		1			2	6		9
Anæmia								4		4
Diabetes mellitus								2		2

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GREAT LAKES.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases	70	775	507	243	28	21	46	3711	4556
Diseases of the Nervous System	9	55	32	18	5	2	7	271	335
Congestion of brain		1	1						1
Inflammation of cerebral membranes	1	4	1	3		1			5
Spinal meningitis								1	1
Softening of brain or cord		1					1		1
Paralysis	4	3	2	2	1		2	2	9
Hemiplegia	3	4	1	2		1	3		7
Local paralysis		3		3				7	10
Eclampsia								1	1
Spasm of muscle								1	1
Wry-neck		2	2						2
Neuralgia		16	13	3				152	168
Facial		5	4		1			56	61
Sciatica		7	6		1			24	31
Vertigo		1		1				1	2
Megrim								2	2
Epilepsy		2		2				10	12
Chorea		2	1	1				1	3
Hysteria								2	2
Hypochondriasis								6	6
Insanity		1			1			1	2
Mania	1	2	1	1			1		3
Melancholia		1			1			4	5
Diseases of the Eye	8	23	16	10	4		1	90	121
Conjunctivitis:									
Catarrhal		4	4					23	27
Purulent	1	7	4	2	1		1	46	54
Chronic	1	1	2					1	3
Granular		2	2					5	7
Pterygium		1	1					1	2
Keratitis		3	2	1					3
Ulcer of cornea	1	2	1	2					3
Opacity of cornea								1	1
Iritis	1	1		2				2	4
Choroiditis	2			2				2	4
Inflammation of optic nerve		1			1				1
Retinitis	1				1			1	2
Cataract, lenticular								1	1
Amaurosis	1				1			2	3
Squint								1	1
Blepharitis								1	1
Stye								3	3
Entropion		1		1					1
Diseases of the Ear		2	1	1				24	26
Inflammation of the external meatus:									
a. Acute								7	7
b. Chronic		1		1					1
Accumulation of wax								5	5
Inflammation of the middle ear		1	1					10	11
Deafness								2	2
Diseases of the Nose								58	58
Nasal catarrh								55	55
Ulceration								2	2
Ozæna								1	1
Diseases of the Circulatory System	6	34	2	28	3	7		85	125
Pericarditis	1	4	2	3				1	6
Endocarditis	4	13		13		4		1	18
Valvular disease:									
Aortic		1		1				6	7
Mitral	1	6		3	3	1		27	34
Hypertrophy of heart		2		1		1		2	4
Degeneration of heart, fatty								6	6

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GREAT LAKES.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Discharged— Improved.	Discharged— Not improved.	Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dis- pensary.
Local Diseases.									
DISEASES OF CIRCULATORY SYSTEM—Cont'd.									
Dilatation of heart								4	4
Palpitation and irregular action of heart		1		1				18	19
Aneurism of arteries		2		1		1		1	3
Obstruction of arteries								2	2
Phlebitis		1		1					1
Varix		4		4				17	21
DISEASES OF THE RESPIRATORY SYSTEM	7	172	109	43	5	8	14	887	1,066
Hay asthma								1	1
Laryngitis:									
Acute								26	26
Chronic	1		1					2	3
Catarrhal		1	1					3	4
Bronchitis:									
Acute	1	65	52	12			2	496	563
Chronic		27	10	14	1		2	168	195
Catarrhal		7	7					86	93
Spasmodic asthma	1	8	3	5			1	46	55
Hæmoptysis of lung		1	1					1	2
Pneumonia	2	19	13	1		5	2	4	25
Cirrhosis of lung								2	2
Pneumonic phthisis:									
Acute		1		1					1
Chronic		20	8	2	1	3	6	32	52
Emphysema		1		1					1
Hydrothorax		1	1						1
Pleurisy:									
Acute	1	15	12	3			1	12	28
Chronic	1	4		3	2			7	12
Empyema		1		1					1
Adhesions of pleura		1			1			1	2
DISEASES OF THE DIGESTIVE SYSTEM	5	115	83	31	1	3	2	943	1,063
Cyst of the lips								1	1
Fissure of the lips								1	1
Stomatitis								2	2
Ulcerative stomatitis								1	1
Noma								5	5
Ranula		1	1						1
Inflammation of the dental pulp								2	2
Caries of dentine and cementum								28	28
Abscess of dental periosteum								6	6
Ulceration of gums and alveoli								2	2
Inflammation of the tongue								1	1
Ulcer of the tongue								3	3
Hypertrophy of tonsils								1	1
Elongated uvula								1	1
Sore throat								40	40
Quinsy		3	3					8	11
Follicular tonsillitis		3	3					34	37
Ulceration of fauces		2	1	1				6	8
Inflammation of salivary glands		1	1						1
Follicular inflammation of the pharynx								32	32
Ulceration of pharynx								1	1
Inflammation of the stomach	2	21	15	6		1	1	19	42
Ulceration of the stomach		1	1						1
Dilatation of the stomach	1			1				3	4
Dyspepsia		15	8	7				248	263
Gastrodynia								6	6
Pyrosis								1	1
Enteritis		4	4					3	7
Colitis		1	1						1
Intussusception	1		1						1
Hernia		3		1		1	1	82	85

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GREAT LAKES.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Cont'd.									
Tænia solium		4	3	1				5	9
Ascaris lumbricoides								1	1
Oxyuris vermicularis								1	1
Diarrhœa	1	18	16	3				117	136
Constipation		1	1					102	103
Colic		3	3					60	63
Abscess of the rectum		1	1					2	3
Piles:									
Internal		9	5	3	1			42	51
External		10	7	3				32	42
Prolapsus of the rectum								2	2
Fistula in ano		4	2	2				5	9
Fissure of the anus		1		1					1
Pruritus ani								12	12
Hypertrophy of the liver								2	2
Congestion of the liver		2	2					12	14
Hepatitis		1	1					4	5
Cirrhosis of liver		2		2					2
Abscess of liver		1				1			1
Jaundice		2	2					5	7
Biliary colic								2	2
Peritonitis		1	1						1
DISEASES OF THE LYMPHATIC SYSTEM	2	52	34	17	1		2	87	141
Congestion of the spleen		1	1						1
Inflammation of lymph-vessels		2	2					1	3
Suppuration of lymph-vessels								18	18
Inflammation of lymph-glands	2	24	15	8	1		2	51	77
Suppuration of lymph-glands		25	16	9				17	42
DISEASES OF THE THYROID BODY								2	2
Goitre								2	2
DISEASES OF THE URINARY SYSTEM	1	31	10	17	2	1	2	144	176
Acute nephritis		3	2		1			5	8
Bright's disease	1	8		6	1	1	1	26	35
Pyelitis								2	2
Abscess of kidney								1	1
Nephralgia		1	1						1
Diabetes insipidus								2	2
Suppression of urine								2	2
Hæmaturia		1	1					1	2
Inflammation of bladder:									
Acute		6	5	1				48	54
Chronic		8		7			1	27	35
Calculus of bladder								1	1
Irritability of bladder								24	24
Retention of urine		1	1					4	5
Incontinence of urine		3		3				1	4
DISEASES OF THE GENERATIVE SYSTEM	13	134	93	39	3		12	525	672
Urethritis								6	6
Gleet		1					1	89	90
Stricture of urethra:									
Organic	3	31	15	17			2	63	97
Spasmodic		3	2	1				4	7
Acute inflammation of prostate gland		1		1				1	2
Chronic inflammation of prostate gland								6	6
Inflammation of the penis		1		1				1	2
Inflammation of glans of penis								19	19
Abscess of penis		1	1						1
Ulcer of penis	6	43	37	7	1		4	194	243
Phimosis		6	4	1			1	3	9
Paraphimosis		2	2					3	5

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous years.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF GENERATIVE SYSTEM—Cont'd.									
Œdema of the scrotum								1	1
Abscess of the scrotum		1		1				1	2
Pruritis of the scrotum								1	1
Hydrocele of spermatic cord		2	1				1	7	9
Varicocele								6	6
Hydrocele of tunica vaginalis		5	1	3	1			8	13
Orchitis:									
Acute	1	10	9	2				23	34
Chronic	1	1		1	1			8	10
Epididymitis	2	18	17	1			2	21	41
Abscess of testicle								1	1
Spermatorrhœa		1					1	39	40
Impotence								5	5
Neuralgia of the testicle		2	2					4	6
Inflammation of the uterus		2		2				2	4
Catarrh of the uterus		2	2						2
Displacement of the uterus								1	1
Catarrh of the vagina								1	1
Recto-vaginal fistula								1	1
Monorrhagia								1	1
Leucorrhœa		1		1				5	6
DISEASES OF THE ORGANS OF LOCOMOTION	5	44	25	18	3		3	36	85
Hypertrophy of clavicle		1		1					1
Ostitis		2	1	1				4	6
Periostitis		1	1					3	4
Osteo-myelitis		1					1		1
Caries	1	3	1	2	1			1	5
Necrosis	2	10	8	4				4	16
Dropsy of joints		1		1					1
Synovitis:									
Acute	1	9	8	2				3	13
Chronic		5	2	2	1			7	12
Abscess of joints		2	2						2
Ankylosis		1					1		1
Loose cartilage		1			1				1
Angular curvature of spine		2		1			1		2
Atrophy of muscles		1		1					1
Abscess of muscles		1		1				1	2
Inflammation of tendons								5	5
Contraction of tendons		1		1					1
Flat-foot		1		1					1
Inflamed bursa								5	5
Thecal abscess	1		1						1
Bunion		1	1					3	4
DISEASES OF THE CONNECTIVE TISSUE	5	34	34	3	1		1	50	89
Œdema		1		1					1
Inflammation	1	6	6				1	9	16
Abscess	4	27	28	2	1			40	71
Undue formation of fat								1	1
DISEASES OF THE SKIN	9	79	68	18			2	509	597
Erythema								2	2
Urticaria		1	1					25	26
Eczema	1	15	12	14				107	123
Impetigo								2	2
Ecthyma								1	1
Pityriasis								1	1
Prurigo								4	4
Lichen								4	4
Psoriasis	1			1				13	14
Herpes	1		1					13	14
Zona								5	5

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE SKIN—Continued.									
Acne								20	20
Gutta rosea								1	1
Ichthyosis								1	1
Chloasma								1	1
Frostbite		4	4					4	8
Ulcer	4	30	23	9			2	86	120
Fissures								1	1
Boil	1	8	9					59	68
Carbuncle		5	4	1				9	14
Whitlow	1	9	8	2				20	30
Onychia		1	1					4	5
Cheloid		1	1					4	5
Wen		1	1					8	9
Pruritus								2	2
Hyperidrosis								1	1
Anidrosis								1	1
Ringworm								4	4
Itch		4	3	1				100	104
Phthiriasis								4	4
Undetermined								2	2
Poisons	1	10	10	1				27	38
Lead								1	1
Alcohol	1	10	10	1				25	36
Rhus								1	1
POISONED WOUNDS								1	1
Venomous animals								1	1
Injuries	25	350	279	54	6	5	31	492	867
GENERAL INJURIES	2	21	19	2	1		1	46	69
Burns and scalds	1	15	15	1				22	38
Effects of cold								20	20
Sunstroke		1	1						1
Multiple injury	1	4	2	1	1		1	1	6
Asphyxia								3	3
Exhaustion		1	1						1
LOCAL INJURIES	23	324	257	52	5	5	28	444	791
Compression of ulnar nerves								1	1
Wound of arteries		1	1					1	2
Rupture of veins								1	1
Strain of muscles								1	1
Rupture of muscles								2	2
Contusion of scalp	1	2	3					3	6
Scalp-wound:									
Bone not exposed		3	3					13	16
Bone exposed		1	1					2	3
Contusion of skull		1	1						1
Fracture of the vault of the skull		3	3					1	4
Fracture of the base of the skull		4	1			3			4
Concussion of brain		7	4	2			1		7
Contusion of face		1	1					6	7
Wound of face		6	6					19	25
Fracture of facial bones		5	3		1		1	4	9
Injuries of the alveoli and teeth								1	1
Contusion of the eye								3	3
Foreign body in cornea or conjunctiva		2	1	1				8	10
Wound of eyelid								1	1
Wound of cornea								1	1
Wound of neck		1	1					1	2
Foreign body in the œsophagus								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
Injuries.									
LOCAL INJURIES—Continued.									
Contusion of the chest		27	25	2				22	49
Fracture of the ribs	1	13	8	5	1			12	26
Fracture of the sternum		1		1					1
Wound of parietes of chest		1	1					8	9
Contusion of back	1	12	10	2			1	8	21
Sprain of back	2	12	12	2				17	31
Wound of back								3	3
Concussion of cord		1				1			1
Compression of cord without fracture		5	2	1	1	1		1	6
Contusion of abdomen		1	1					1	2
Contusion of pelvis		2	2					3	5
Wound of organs of generation								2	2
Contusion of upper extremities	3	27	21	8			1	26	56
Sprain of the shoulder		2	2					1	3
Sprain of the elbow		2	2					8	10
Sprain of the wrist		5	3	1			1	16	21
Sprain of the fingers								1	1
Wound of the upper extremities	2	22	19	2			3	95	119
Wound of joint, upper extremities		4	2	2					4
Fracture of the clavicle	1	4	4				1	1	6
Fracture of the scapula		2	1	1					2
Fracture of the humerus		3	2				1	1	4
Fracture of the radius	1	3	2	2				1	5
Fracture of both bones of forearm		2		2				1	3
Fracture of carpus, metacarpus, and phalanges	1	2	2	1				5	8
Dislocation of the humerus		3	2	1				3	6
Dislocation of the phalanges of thumb								1	1
Contusion of the lower extremities	1	52	47	5			1	33	86
Sprain of the hip		1	1					1	2
Sprain of the knee		6	4	1			1	23	29
Sprain of the ankle	1	20	15	2			4	24	45
Sprain of the foot		2	1				1	1	3
Wound of the lower extremities	4	24	22	1			5	44	72
Fracture of femur	1	4	2	2			1		5
Fracture of leg, both bones		12	8	1	1		2	4	16
Fracture of tibia alone	1	2		1	1		1		3
Fracture of fibula alone	1	4	4	1					5
Fracture of tarsus	1		1						1
Fracture of metatarsus		2		1			1		2
Fracture of phalanges of toes		1		1				2	3
Dislocation of the petella								1	1
Dislocation of the knee								3	3
Dislocation of the foot at the ankle		1					1		1
Dislocation of the metatarsus and phalanges								1	1
AMPUTATIONS		5	3				2	2	7
Amputation of arm		2	2						2
Amputation of fingers		3	1				2	1	4
Amputation of leg								1	1

THE PACIFIC.

TOTAL CASES	**56**	**940**	**604**	**259**	**10**	**57**	**66**	**1644**	**2640**
General Diseases	**19**	**363**	**200**	**125**	**2**	**25**	**30**	**661**	**1043**
Mumps		2	1	1				3	5
Enteric fever	2	8	7			1	2		10
Dysentery		10	6			3	1	1	11

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE PACIFIC.

Diseases.	Number of Cases.								
	Remaining under treatment from previous years.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Malarial intermittent fever	1	28	28			1		82	111
Malarial remittent fever		10	10						10
Malarial cachexia		3	2	1				6	9
Phagedæna		2	1	1					2
Erysipelas—simple		5	4	1					5
Pyæmia		2				2			2
Syphilis:									
Primary	3	16	13	6				40	59
Secondary	4	83	36	44		1	6	158	243
Gonorrhœa	1	23	17	3			4	162	186
Scurvy		7	6				1	6	13
Alcoholism		10	8		1	1		5	15
Delirium tremens								3	3
Debility		2		1		1		19	21
Rheumatic fever		20	16	4				12	32
Rheumatism	1	56	40	13			4	118	175
Gout		3	3						3
Osteo-arthritis	1	1					2		2
Fibroma								1	1
Warts								1	1
Condyloma								5	5
Carcinoma colloid								1	1
Tubercle of lung	5	69		49	1	14	10	39	113
Scrofula	1					1			1
Purpura		1	1						1
Anæmia		1	1					1	2
Diabetes mellitus		1		1					1
Local Diseases	27	398	273	96	8	27	21	789	1214
DISEASES OF THE NERVOUS SYSTEM	4	39	19	14	4	2	4	91	134
Congestion of cerebrum		1		1					1
Congestion of spinal cord		1	1						1
Inflammation of brain and its membranes								1	1
Softening of brain or cord		1			1				1
Sclerosis		2					2		2
Locomotor ataxy	1				1			1	2
Apoplexy		1		1				2	3
Paralysis		1		1					1
Hemiplegia	1	3		3		1		1	5
Paraplegia		1	1						1
Local paralysis	1	1	1		1				2
Glosso-labio-pharyngeal paralysis		1		1					1
Spasm of muscle								2	2
Neuralgia	1	5	5	1				58	64
Facial		1	1					5	6
Sciatica		14	9	4			1	12	26
Vertigo		1					1	2	3
Megrim								1	1
Epilepsy		2	1	1				5	7
Hypochondriasis								1	1
Insanity		1		1					1
Dementia		1				1			1
General paralysis of the insane		1			1				1
DISEASES OF THE EYE	1	12	12		1			15	28
Conjunctivitis:									
Catarrhal	1	2	2		1			8	11
Purulent		2	2					1	3
Iritis		7	7					2	9
Hypermetropia								3	3
Squint		1	1						1
Blepharitis								1	1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE PACIFIC.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged— Recovered.	Improved.	Not improved.	Died.	Remaining under treatment at the close of year.	Furnished office-relief.	Total treated in hospital.
Local Diseases.									
DISEASES OF THE EAR		1		1				4	5
Inflammation of the external meatus:									
Acute		1		1					1
Accumulation of wax								2	2
Perforation of membrana tympani								2	2
DISEASES OF THE NOSE		3	1	2				11	14
Nasal catarrh								7	7
Ulceration		3	1	2					3
Ozæna								4	4
DISEASES OF THE CIRCULATORY SYSTEM	6	26	2	19		9	2	15	47
Pericarditis								1	1
Valvular disease:									
Aortic	2	10		4		7	1	4	16
Mitral		7		6			1		7
Tricuspid		1		1					1
Hypertrophy of heart								1	1
Dilatation of heart								1	1
Angina pectoris		2		2				1	3
Palpitation and irregular action of heart		2	1	1				2	4
Degeneration of arteries		1		1					1
Aneurism of arteries	3	2		3		2		1	6
Phlebitis		1	1						1
Varix	1			1				4	5
DISEASES OF THE RESPIRATORY SYSTEM		36	22	6		5	3	158	194
Hay-asthma								1	1
Laryngitis:									
Acute								4	4
Chronic								2	2
Catarrhal								2	2
Bronchitis:									
Acute		14	9	4			1	64	78
Chronic								23	23
Catarrhal		1	1					43	44
Spasmodic asthma								8	8
Hæmoptysis of lung		2	1	1				1	3
Pneumonia		7	3			4			7
Cirrhosis of lung								1	1
Pneumonic phthisis:									
Acute		1				1			1
Chronic								1	1
Emphysema								1	1
Pleurisy:									
Acute		10	7	1			2	7	17
Chronic		1	1						1
DISEASES OF THE DIGESTIVE SYSTEM	6	58	50	9		4	1	160	224
Caries of dentine and cementum								7	7
Inflammation of dental periosteum								1	1
Abscess of dental periosteum		2	2					4	6
Inflammation of the tongue								1	1
Ulcer of the tongue								1	1
Sore throat								5	5
Quinsy		5	5					3	8
Follicular tonsillitis		3	3					7	10
Salivation								3	3
Follicular inflammation of the pharynx								6	6
Inflammation of the stomach		4	3			1		4	8
Ulceration of the stomach	1					1			1
Dyspepsia		2	2					29	31
Hæmorrhage of the intestines								2	2
Catarrhal inflammation of intestines		2	1	1					2
Ulcer of the intestines		1	1						1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE PACIFIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF DIGESTIVE SYSTEM—Cont'd.									
Obstruction of the intestines		1		1					1
Hernia		1		1				22	23
Tænia solium		3	2				1		3
Fistula of intestines	1	1	1	1					2
Diarrhœa	2	4	6					19	25
Constipation		4	4					32	36
Colic								3	3
Piles:									
Internal		4	4					2	6
External	1	5	4	2				3	9
Prolapsus of the rectum		1	1						1
Fistula in ano	1	4	5						5
Neuralgia of the rectum		1	1						1
Pruritus ani								2	2
Hypertrophy of the liver		2	1	1				2	4
Congestion of the liver								2	2
Hepatitis		2	2						2
Cirrhosis of liver		2		1		1			2
Abscess of liver		1	1						1
Obstruction of the vena portæ		1		1					1
Peritonitis		2	1			1			2
DISEASES OF THE LYMPHATIC SYSTEM	1	18	16	3				21	40
Hypertrophy of lymph-glands								5	5
Inflammation of lymph-glands		4	4					2	6
Suppuration of lymph-glands	1	14	12	3				13	28
Lymphadenoma								1	1
DISEASES OF THE URINARY SYSTEM	1	22	4	11	1	4	3	26	49
Acute nephritis		2				2		2	4
Bright's disease	1	12		9	1	2	1	3	16
Pyelitis		1					1		1
Lardaceous kidney								2	2
Lithuria		2	1				1	2	4
Inflammation of bladder:									
Acute		3	3					4	7
Chronic		2		2				11	13
Irritability of bladder								1	1
Incontinence of urine								1	1
DISEASES OF THE GENERATIVE SYSTEM	2	71	58	11	1	1	2	142	215
Urethritis		1	1					1	2
Gleet		1		1				29	30
Lacunar abscess								1	1
Stricture of the urethra, organic	1	31	24	5	1	1	1	26	58
Extravasation of urine		1	1						1
Acute inflammation of prostate gland								2	2
Chronic inflammation of prostate gland								3	3
Inflammation of glans of penis		1	1					3	4
Ulcer of penis		4	4					45	49
Phimosis		5	3	1			1	4	9
Hydrocele of spermatic cord		1		1					1
Varicocele		2	1	1				7	9
Neuralgia of spermatic cord								1	1
Hydrocele of tunica vaginalis		5	5					4	9
Orchitis:									
Acute	1	2	3					1	4
Chronic		3	2	1				3	6
Epididymitis		13	13					8	21
Spermatorrhœa		1		1				4	5
DISEASES OF THE ORGANS OF LOCOMOTION	5	33	24	10	1	1	2	30	68
Ostitis		1	1					1	2
Periostitis		4	3	1				2	6

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE PACIFIC.

Diseases.	Number of cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospitals and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF ORGANS OF LOCOMOTION—Cont'd.									
Caries	2	1	2	1				4	7
Necrosis		5	2	3				3	8
Ununited fracture, or false joint	1	1	2						2
Dropsy of joints								1	1
Synovitis:									
Acute	1	10	6	4	1			6	17
Chronic		3	1	1			1	2	5
Ankylosis		2	1				1	2	4
Caries and necrosis of spine	1					1			1
Atrophy of muscles		1	1						1
Inflammation of muscles		1	1						1
Inflammation of tendons								1	1
Contracted palmar fascia		1	1					1	2
Inflamed bursa		1	1					1	2
Thecal abscess		2	2					4	6
Bunion								1	1
Ganglion								1	1
DISEASES OF THE CONNECTIVE TISSUE		30	25	3		1	1	13	43
Inflammation		7	6	1				3	10
Abscess		23	19	2		1	1	10	33
DISEASES OF THE SKIN	1	49	40	7			3	103	153
Eczema		7	7					14	21
Ecthyma		1	1						1
Pityriasis		1	1						1
Prurigo								1	1
Lichen								2	2
Psoriasis		1		1				1	2
Herpes								3	3
Acne		1					1	8	9
Frostbite		2	2					1	3
Ulcer	1	26	21	4			2	29	56
Cicatrices		1	1						1
Boil		2	2					25	27
Carbuncle		1	1					1	2
Whitlow		2	2					6	8
Onychia		2	1	1				1	3
Lupus		1		1					1
Wen		1	1					2	3
Ringworm								1	1
Tinea versicolor								2	2
Itch								3	3
Phthiriasis								1	1
Pulex irritans								1	1
Undetermined								1	1
Poisons		3	3					3	6
Arsenic								1	1
Alcohol		3	3					2	5
POISONED WOUNDS		2	2					1	3
Venomous animals		1	1					1	2
Vegetable substances		1	1						1
Injuries	10	174	126	38		5	15	190	374
GENERAL INJURIES	1	13	12	1			1	13	27
Burns and scalds	1	6	6	1				4	11
Effects of cold		2	2					9	11
Multiple injury		5	4				1		5

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

THE PACIFIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES	9	157	113	36		4	13	175	341
Rupture of veins		1					1		1
Strain of muscles								1	1
Foreign body, in subcutaneous tissue		2	2					1	3
Contusion of scalp								2	2
Scalp-wound :									
Bone not exposed		1	1					11	12
Bone exposed		4	4						4
Fracture of the base of the skull		1				1			1
Concussion of brain		2	2						2
Wound of face		6	6					7	13
Fracture of facial bones		3	3					7	10
Injuries of the alveoli and teeth								1	1
Foreign body in cornea or conjunctiva		1		1					1
Wound of cornea		1	1						1
Separation of cartilage of ear from the bone		2	1	1				1	3
Wound of neck		1		1				1	2
Contusion of the chest		5	5					6	11
Fracture of the ribs		5	2	3				1	6
Wound of parietes of chest		1		1				2	3
Perforating wound of chest		2	2						2
Contusion of back		8	7				1	10	18
Sprain of back		4	4					7	11
Fracture of spine		1				1			1
Concussion of cord		3	1			1	1		3
Compression of cord without fracture		1		1					1
Wound of organs of generation		2					2	1	3
Fracture and dislocation of pelvis		3	3						3
Contusion of upper extremities		4	3	1				12	16
Sprain of the shoulder		3	3					5	8
Sprain of the elbow								1	1
Sprain of the wrist		3	3					7	10
Sprain of the fingers		1		1				3	4
Wound of the upper extremities	1	17	10	8				38	56
Wound of the joint, upper extremities	1		1						1
Fracture of the clavicle	1	2	2	1					3
Fracture of the humerus	1	2		3					3
Fracture of the radius								2	2
Fracture of both bones of forearm		2	2						2
Fracture of carpus, metacarpus, and phalanges		6	2	2			2	8	14
Dislocation of the clavicle		1		1				1	2
Dislocation of the humerus		3	2	1				1	4
Dislocation of the carpus		1		1					1
Contusion of the lower extremities		12	9	2			1	11	23
Sprain of the hip								1	1
Sprain of the knee		1	1					2	3
Sprain of the ankle		13	12	1				9	22
Wound of the lower extremities	1	10	8	2			1	13	24
Fracture of femur	2	4	2	2		1	1		6
Fracture of cervix femoris		1	1						1
Fracture of leg, both bones	1	2	2				1		3
Fracture of tibia alone		6	4				2	2	8
Fracture of fibula alone		1	1						1
Fracture of phalanges of toes	1	1	1	1					2
Dislocation of the femur at the hip		1		1					1
AMPUTATIONS		4	1	1		1	1	2	6
Amputation of arm		1				1			1
Amputation of fingers								2	2
Amputation of thigh		1					1		1
Amputation of leg		1		1					1
Amputation of foot		1	1						1

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

QUARANTINE.

Diseases.	Number of Cases.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Total Cases	3	93	79	9		3	5	315	411
General Diseases	3	49	42	5		2	3	112	164
Small-pox								7	7
Typho-malarial fever	2		2						2
Yellow fever	1	4	5						5
Epidemic diarrhœa								3	3
Dysentery								2	2
Malarial intermittent fever		9	8	1				48	57
Malarial remittent fever		23	18			2	3	6	29
Malarial cachexia		1		1				4	5
Syphilis:									
Primary		1		1				1	2
Secondary		3	2	1				12	15
Gonorrhœa		1	1					10	11
Debility		4	4					1	5
Rheumatic fever		3	2	1					3
Rheumatism								18	18
Local Diseases		32	28	3			1	170	202
Diseases of the Nervous System		3	2	1				11	14
Hæmorrhage, spinal		2	1	1					2
Inflammation of the spinal cord and its membranes								1	1
Eclampsia		1	1						1
Spasm of muscle								1	1
Neuralgia								4	4
Sciatica								1	1
Vertigo								1	1
Megrim								1	1
Epilepsy								2	2
Diseases of the Eye								4	4
Conjunctivitis, catarrhal								3	3
Iritis								1	1
Diseases of the Ear								1	1
Abscess of the external meatus								1	1
Diseases of the Nose								3	3
Nasal catarrh								2	2
Ozæna								1	1
Diseases of the Respiratory System		9	9					31	40
Bronchitis:									
Acute		6	6					29	35
Chronic		1	1					1	2
Pneumonia		1	1						1
Pleurisy:									
Acute		1	1						1
Chronic								1	1
Diseases of the Digestive System		11	9	1			1	85	96
Caries of dentine and cementum								8	8
Inflammation of gums and alveoli								1	1
Sore throat								1	1
Quinsy								1	1
Follicular tonsilitis								1	1
Inflammation of salivary glands		1	1						1
Dyspepsia								21	21
Enteritis		4	4					1	5
Typhlitis		1					1		1
Hernia								2	2
Diarrhœa		4	3	1				13	17

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

QUARANTINE.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Cont'd.									
Constipation		1	1					26	27
Colic								6	6
Piles:									
Internal								2	2
External								1	1
Jaundice								1	1
DISEASES OF THE LYMPHATIC SYSTEM		2	1	1				2	4
Hypertrophy of the spleen		1	1					1	2
Inflammation of lymph-glands		1		1				1	2
DISEASES OF THE URINARY SYSTEM		1	1					3	4
Bright's disease		1	1						1
Inflammation of bladder, chronic								3	3
DISEASES OF THE GENERATIVE SYSTEM								5	5
Gleet								1	1
Orchitis, chronic								2	2
Dysmenorrhœa								1	1
Puerperal ephemera								1	1
DISEASES OF THE ORGANS OF LOCOMOTION		1	1					3	4
Necrosis		1	1						1
Synovitis, acute								1	1
Inflamed bursa								1	1
Thecal abscess								1	1
DISEASES OF THE CONNECTIVE TISSUE		1	1					2	3
Abscess		1	1					2	3
DISEASES OF THE SKIN		4	4					20	24
Urticaria								1	1
Impetigo								1	1
Ecthyma								3	3
Prurigo		1	1						1
Lichen								1	1
Herpes								1	1
Acne								3	3
Frostbite		1	1					1	2
Ulcer		2	2					3	5
Boil								3	3
Whitlow								2	2
Irritation by stinging plants								1	1
Poisons								1	1
Poisonous fish								1	1
POISONED WOUNDS								1	1
Venomous animals								1	1
Injuries		12	9	1		1	1	31	43
GENERAL INJURIES		1	1					1	2
Lightning stroke								1	1
Exhaustion		1	1						1
LOCAL INJURIES		11	8	1		1	1	30	41
Foreign body in subcutaneous tissue								2	2
Scalp wound, bone not exposed		2	1	1				2	4
Fracture of the base of the skull		1				1			1
Wound of face								1	1
Contusion of the eye								1	1
Fracture of the ribs								2	2

TABLE VII.—*Tabular Statement, by Districts, of Diseases and Injuries, &c.*—Continued.

QUARANTINE.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged—			Died.	Remaining under treatment at the close of the year.	Furnished office-relief.	Total treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Sprain of back								2	2
Wound of back		1	1					1	2
Contusion of abdomen		2	2						2
Sprain of the elbow								1	1
Sprain of the wrist								2	2
Sprain of the fingers								1	1
Wound of the upper extremities		1	1					5	6
Fracture of the humerus		1	1						1
Contusion of the lower extremities								4	4
Sprain of the knee								1	1
Sprain of the ankle								2	2
Wound of the lower extremities		2	1				1	3	5
Fracture of leg, both bones		1	1						1

TABLE VIII.—*Tabular Statement, by Districts, of Causes of Mortality among Patients of the Service during the Year ended June 30, 1886.*

CAUSES OF DEATH.	Total.	DISTRICTS. North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Total Deaths from all Causes	**407**	**34**	**58**	**74**	**50**	**42**	**41**	**48**	**57**	**3**
FROM DISEASE	385	32	57	69	50	42	38	43	52	2
FROM INJURY	22	2	1	5			3	5	5	1
General Diseases	**197**	**17**	**28**	**35**	**31**	**20**	**17**	**22**	**25**	**2**
Dengue	1		1							
Cerebro-spinal fever	1					1				
Simple continued fever	3	2		1						
Enteric fever	30	2	2	2	2	7	4	10	1	
Typho-malarial fever	2		1					1		
Dysentery	14	1	3	3	1	2	1		3	
Malarial intermittent fever	14	1	3	2	5	2			1	
Malarial remittent fever	23	2	1	8	8		1	1		2
Erysipelas:										
Simple	2		2							
Phlegmonous	3	1					1	1		
Pyæmia	3							1	2	
Syphilis, secondary	5	1					1	2	1	
Gonorrhœa	1			1						
Alcoholism	1								1	
Delirium tremens	2						1	1		
Debility	1								1	
Rheumatic fever	2		1			1				
Rheumatism	2	1	1							
Sarcoma	1			1						
Carcinoma:										
Of the rectum	1					1				
Scirrhus	1				1					
Cylindroid	1					1				
Tubercle of lung	77	6	10	16	14	5	7	5	14	
Scrofula	2			1					1	
Anæmia	2		2							
Leucocythæmia	1						1			
Diabetes mellitus	1		1							
Local Diseases	**188**	**15**	**29**	**34**	**19**	**22**	**21**	**21**	**27**	
DISEASES OF THE NERVOUS SYSTEM	20	2	2	6	1	3	2	2	2	
Congestion of brain	*1				1					
Hemorrhage, cerebral	1		1							
Inflammation of cerebral membranes	1							1		
Myelitis	1			1						
Locomotor ataxy	1						1			
Hæmatoma cystiform	1			1						
Apoplexy	1			1						
Hemiplegia	2							1	1	
Paraplegia	2		1			1				
Neuralgia	1	1								
Tetanus	1						1			
Mania	5	1		3		1				
Dementia	1								1	
General paralysis of the insane	1					1				
DISEASES OF THE CIRCULATORY SYSTEM	37		9	5	2	5		7	9	
Endocarditus	4							4		
Valvular disease:										
Aortic	19		7	2	1	2			7	
Mitral	7			2	1	3		1		
Hypertrophy of heart	2		1					1		
Aneurism of arteries	4			1				1	2	
Rupture of arteries	1		1							
DISEASES OF THE RESPIRATORY SYSTEM	66	8	6	12	10	6	11	8	5	
Bronchitis:										
Acute	4			1	1		2			
Chronic	1		1							

TABLE VIII.—*Tabular Statement, by Districts, of Causes of Mortality, &c.*—Continued.

CAUSES OF DEATH.	Total.	DISTRICTS. North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Local Diseases.										
DISEASES OF RESPIRATORY SYSTEM—Continued.										
Hæmoptysis of lung	1			1						
Œdema of lung	1		1							
Pneumonia	39	4	2	8	6	2	8	5	4	
Pneumonic phthisis:										
Acute	7	2			1	2	1		1	
Chronic	12	2	2	2	2	1		3		
Pleurisy, acute	1					1				
DISEASES OF THE DIGESTIVE SYSTEM	30	1	4	7	2	3	6	3	4	
Inflammation of the stomach	2							1	1	
Ulceration of the stomach	1								1	
Enteritis	3	1	2							
Obstruction of the intestines	1		1							
Hernia	3			1			1	1		
Diarrhea	6			2			4			
Hepatitis	1			1						
Cirrhosis of liver	6			1	1	2	1		1	
Abscess of liver	2				1			1		
Jaundice	2		1			1				
Peritonitis	3			2					1	
DISEASES OF THE URINARY SYSTEM	17	3	3	2	2		2	1	4	
Nephritis, acute	2								2	
Bright's disease	14	3	3	1	2		2	1	2	
Inflammation of bladder, chronic	1			1						
DISEASES OF THE GENERATIVE SYSTEM	6		3		1	1			1	
Stricture of urethra, organic	4		2		1				1	
Phimosis	1		1							
Paraphimosis	1					1				
DISEASES OF THE ORGANS OF LOCOMOTION	5	1	1	1	1				1	
Necrosis	2		1		1					
Psoas abscess	2	1		1						
Caries and necrosis of spine	1								1	
DISEASES OF THE CONNECTIVE TISSUE	6		1	1		3			1	
Œdema	3					3				
Abscess	3		1	1					1	
UNDETERMINED	1					1				
Injuries	22	2	1	5			3	5	5	1
GENERAL INJURIES	2			2						
Burns and scalds	2			2						
LOCAL INJURIES	19	2	1	3			3	5	4	1
Fracture of the vault of the skull	1		1							
Fracture of the base of the skull	6						1	3	1	1
Concussion of brain	1			1						
Fracture of spine	1								1	
Concussion of cord	2							1	1	
Compression of cord without fracture	3	2						1		
Wound of parietes of abdomen	1						1			
Wound of upper extremity	1			1						
Fracture of femur	3			1			1		1	
Amputation	1								1	
Amputation of arm	1								1	

TABLE IX.—*Ratio of Deaths from Specific Causes.*

Deaths from—	Per 100 from all causes.	Deaths from—	Per 100 from all causes.
General diseases	48.40	Diseases of the urinary system	4.18
Diseases of the nervous system	4.91	Diseases of the generative system	1.48
Diseases of the circulatory system	9.09	Diseases of the organs of locomotion	1.23
Diseases of the respiratory system	16.22	Diseases of connective tissue, &c	1.71
Diseases of the digestive system	7.37	Injuries	5.41

TABLE X.—*Ratio of Deaths in each District.*

Districts.	Per 100 patients treated in hospital.	Districts.	Per 100 patients treated in hospital.
North Atlantic	3.09	The Mississippi	2.79
Middle Atlantic	3.27	The Great Lakes	2.37
South Atlantic	3.54	The Pacific	5.72
The Gulf	2.96	The quarantine stations	3.18
The Ohio	3.05		

TABLE XI.—*Comparative Exhibit—Mortality per* 100 *Patients treated, by Districts,* 1878 *to* 1886.

Districts.	General average.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
North Atlantic	3.18	3.15	2.32	2.19	2.84	4.00	3.50	3.59	3.95	3.09
Middle Atlantic	3.76	3.31	4.05	4.88	3.63	3.92	3.54	3.87	3.34	3.27
South Atlantic	3.16	2.45	3.38	2.89	3.22	3.05	3.97	2.86	3.05	3.54
The Gulf	3.65	3.28	4.82	2.90	3.94	4.98	3.49	4.10	2.49	2.96
The Ohio	3.73	2.40	2.14	3.69	4.38	5.64	5.50	4.33	2.43	3.05
The Mississippi	3.46	3.36	3.96	2.84	3.29	3.51	4.35	4.08	2.93	2.79
The Great Lakes	2.49	1.96	2.09	2.01	3.16	2.49	2.51	3.07	2.79	2.37
The Pacific	4.13	2.20	3.12	4.56	6.09	3.35	3.96	4.88	3.30	5.72

TABLE XII.—*Comparative Exhibit—Ratio of Deaths from Specific Causes,* 1878 *to* 1886.

Deaths from—	General average.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
General diseases	48.32	46.90	49.09	47.35	46.15	51.75	50.00	48.67	46.61	48.40
Diseases of the nervous system	5.55	3.71	4.13	5.02	7.25	5.57	6.77	4.49	8.07	4.91
Diseases of the circulatory system	7.77	8.34	9.05	8.35	7.03	5.15	6.38	6.14	10.42	9.09
Diseases of the respiratory system	14.78	11.73	16.79	13.65	17.80	12.58	16.33	13.90	14.06	16.22
Diseases of the digestive system	9.92	12.34	8.28	10.87	8.13	12.99	10.16	9.20	9.90	7.37
Diseases of the urinary system	5.23	6.79	4.39	5.57	4.40	5.15	3.98	7.36	5.21	4.18
Injuries	5.14	6.17	4.39	5.85	6.60	4.54	3.99	5.94	3.39	5.41
From all other causes	3.29	4.02	3.88	3.34	2.64	2.27	2.39	4.30	2.34	4.42

TABLE XIII.—*Comparative Exhibit—Average Duration of Treatment in Hospital in each District,* 1878 *to* 1886.

Districts.	General average.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
North Atlantic	27.00	28.64	26.69	26.64	22.67	24.86	26.60	30.13	30.22	26.56
Middle Atlantic	27.07	30.67	30.46	26.19	27.68	26.18	24.50	26.84	25.32	25.84
South Atlantic	25.66	27.77	27.72	28.52	23.80	23.20	23.70	23.46	26.06	26.72
The Gulf	24.03	26.85	27.89	24.55	23.60	35.25	20.10	19.97	18.63	19.43
The Ohio	26.24	30.53	32.10	24.57	23.88	29.22	26.50	22.56	23.18	23.61
The Mississippi	20.94	23.35	25.44	20.74	19.66	17.55	22.50	18.16	20.28	20.79
The Great Lakes	28.16	27.78	29.93	26.13	29.42	26.03	27.70	29.75	28.10	28.61
The Pacific	31.01	34.03	33.09	34.41	32.03	27.55	26.10	31.04	31.09	29.74

REPORT OF SURGICAL OPERATIONS.

FISCAL YEAR 1886.

Operations.	No. of cases.	Remarks.
Total Number of Operations	551	
REMOVAL OF TUMORS	29	
For ganglion of wrist	1	Rupture and pressure.
For sebaceous cysts	11	Extirpation.
For mucous cyst of lip	1	Removed with knife.
For keloid of wrist	1	Returned.
For lipoma of neck	2	Removed; knife.
For lipoma of face	1	Do.
For lipoma of back	1	Do.
For lipoma of shoulder	1	Do.
For dermoid cyst	1	Incision and packing.
For enchoudroma of forehead	1	Excision.
For adenoma of chest	1	Do.
For angeioma of face	1	Thermo cautery.
For papilloma of anus	1	Ligation.
For sarcoma, myeloid, of lower jaw	1	Died from anæsthetic; ether.
For epithelioma	4	Excision.
REMOVAL OF FOREIGN BODIES	4	
For punctured wound of nose	1	Incision and removal; two pieces of wood.
For gunshot wound of thigh	1	Cut down on and ball removed.
For gunshot wound of pubes	1	Ball removed.
For needle in hand	1	Removed by dissection.
OPENING OF ABSCESSES	16	
For abscess of liver	2	One died; one recovered.
For abscess of back	1	Aspiration.
For abscess of femur (osteo-myelitis)	1	Abscess opened; bone scraped.
For abscess, dissecting, knee to ankle	1	Incision and drainage.
For abscess, scrotal and perineal	3	Incision.
For abscess, perityphlitic	1	Aspiration; free incision.
For abscess, femur, diffuse periostitis	1	Free incision; 650 cc. pus removed.
For abscess, testicle	1	Incision.
For abscess, recto perineal	3	Do.
For abscess, abdomen	2	Incision; one died.
OPERATIONS ON THE EYE AND APPENDAGES	19	
For entropion	1	Usual operation.
For symblepharon	1	Upper lid dissected from cornea.
For trichiasis	1	Usual operation.
For strabismus	2	Tenotomy int-rectus.
For pterygium	6	Excision; all successful.
For lachrymal fistula	1	Canaliculus slit.
For adhesion of iris	1	Iridectomy.
For cataract, hard	3	Extraction lens, two; one secondary discision.
For excision of eye-ball	2	For staphyloma, one; ophthalmia, one.
For chalazion	1	Sac removed.
OPERATIONS ON THE EAR	2	
For abscess, external meatus	1	Incision.
For boil, external meatus	1	Incision and crushing.
OPERATIONS ON THE NOSE	6	
For polypus, naso-pharyngeal	1	Removed with snare.
For polypus, nasal	3	Removed, écraseur, one; snare, one; forceps, one.
For epistaxis	1	Anterior and posterior nares, plugged.
For occlusion, posterior nares	1	Opening restored; scissors and knife.
OPERATIONS ON THE HEAD	9	
For necrosis, frontal bone	1	Trephined; case in hospital.
For fracture of the skull, compound	1	Trephined; died.
For caries, mastoid portion temporal bone	1	Partial excision; successful.
For caries, inferior maxilla	2	Bone scraped.
For ununited fracture, inferior maxilla	3	Bones scraped and wired; one success; one died.
For necrosis of malar bone	1	Diseased bone removed; succcessful.

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For necrosis of malar bone	1	Diseased bone removed; successful.

Surgical Operations—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON THE ARTERIES	2	
For incised wound of thigh	1	Ligation, circumflex artery; successful.
For aneurism, popliteal artery	1	Compression, Esmarch; in hospital.
OPERATIONS ON THE VEINS	8	
For varix of leg	2	Pins and ligature; successful.
For varicocele	5	Ligature, two; removal portion scrotum, th
For rupture internal saphenous vein	1	Ligation with hare-lip pins.
OPERATIONS ON RESPIRATORY ORGANS	12	
For hydrothorax	8	Paracentesis; successful, eight.
For empyema	4	Died, two; in hospital, two.
OPERATIONS ON DIGESTIVE ORGANS	61	
For abdominal fistula	2	Enterokleisis; not successful, 1; partially so
For hernia, inguinal, strangulated	5	Sac opened, 2; taxis, 2; 1 died; 4 recovered
For hernia, umbilical, strangulated	1	Sac opened; died.
For hernia, radical cure	1	Heatons method; not successful.
For prolapsus of rectum	1	Ligature and cautery.
For stricture of rectum	1	Dilatation; successful.
For fistula in ano	23	Incision, 20; ligature, 3; all successful.
For anal fissure	1	Forcible dilatation.
For ulcer of rectum	1	Dilatation and excision.
For hæmorrhoids	19	Ligation, 13; injection carbolic acid, 6; all successful.
For gunshot wound abdomen	1	Laparatomy; died.
For perforation of intestine	1	Do. Do.
For ascites	4	Tapped; trocar-canula; all died.
OPERATIONS ON THE LYMPHATIC ORGANS	16	
For removal diseased lymph-glands	16	Dissected out.
OPERATIONS ON THE URINARY ORGANS	187	
For pyonephrosis	1	Nephrectomy; successful.
For retention of urine	1	Aspiration bladder; successful.
For vesical calculus, oxalate	1	Lateral lithotomy; successful; calculus, 30
For stricture of the urethra:		
a. Gradual dilatation	45	
b. Forcible dilatation	65	
c. Internal urethrotomy	58	1 died.
d. External urethrotomy	11	2 died.
e. Electrolysis	2	
For cystitis chronic	1	Cystotomy; no improvement.
For urinary fistula	2	Still in hospital.
OPERATIONS ON THE GENERATIVE ORGANS:		
For phymosis	80	Circumcision, 72; slitting, 8.
For paraphymosis	4	
For hypospadias	1	Successful.
For hydrocele	32	16 radical cure; 16 tapping.
For carcinoma, testicle (medullary)	2	Castration.
For orchitis, chronic	2	Castration, 1; acupuncture, 1.
For syphilitic disease of testicle	1	Castration.
For cystic disease of testicle	1	Do.
For hæmatocele	1	Enucleation.
OPERATIONS ON THE ORGANS OF LOCOMOTION:		
ON BONES	16	
For necrosis, metatarsus	1	Excision of bones; in hospital.
For lacerated wound, elbow-joint	1	Excision elbow-joint, complete; successful
For compound comminuted fracture, ulna	1	Excision ends of bones; not successful.
For necrosis, bones of hand	1	Sequestræ removed; successful.
For caries of ribs	1	Diseased bone removed; successful.
For caries of pelvis (pubes)	1	Diseased bone removed; not successful.
For necrosis of scapula	2	Bones scraped; improved.
For necrosis of sacrum	1	Bones scraped; successful.
For necrosis os calcis	1	Diseased bone removed; successful.
For necrosis tibia	3	Sequestra removed; 2 successful; 1 failure.
For osteo-myelitis, tibia	1	Trephined; in hospital.
For osteitis, femur	1	Incision; removal dead bone; success.
For ununited fracture, femur	1	Needles between fragments; successful.
ON JOINTS	58	
Reduction of dislocations	15	
Shoulder	9	Manipulation.
Clavicle, acromial	1	Result good.
Carpus, forward	1	Do.
Elbow	1	Manipulation.
Foot, forward	1	Result good.
Hip	1	Manipulation.

Surgical Operations—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON ORGANS OF LOCOMOTION—Continued.		
ON JOINTS—Continued.		
Thumb, forward	1	Manipulation; successful.
Ankylosis knee-joint	4	Forcible flexion; successful, 1.
Ankylosis shoulder	1	Adhesions broken up.
Loose cartilages, knee-joint	1	Removed; successful.
Chronic synovitis, knee-joint	15	All successful; aspiration.
Do	1	Incision and drainage.
Do	1	Subcutaneous section.
Do	1	Actual cautery.
Chronic synovitis, ankle-joint	1	Aspiration; successful.
Bursal abscess	2	Aspiration.
Talipes equino varus	1	Tenotomy; successful.
AMPUTATIONS	102	
Fingers, for whitlow	7	
Fingers, for frostbite	12	
Fingers, for necrosis	12	
Fingers, for abscess	1	
Fingers, for osteitis	1	
Fingers, for compound fracture	5	
Fingers, for lacerated wound	14	
Fingers, for phlegmonous erysipelas	1	
Fingers, for onychia	1	
Fingers, for poisoned wound	1	
Forearm, for compound comminuted fracture	2	Successful.
Forearm, for lacerated wound, hand	1	Do.
Forearm, for gun-shot wound	1	Do.
Toes, for compound fracture	5	Do.
Toes, for frostbite	20	Do.
Toes, for old dislocation	1	Do.
Toes, for caries	1	Do.
Toes, for lacerated wound	1	Do.
Foot, for compound fracture	1	Sédillot's; successful.
Foot, for frostbite	1	Hey's; successful.
Leg, for compound comminuted fracture	5	Successful.
Leg, for necrosis	2	Do.
Leg, for lacerated wound	1	Do.
Thigh, for osteo sarcoma	1	Do.
Thigh, for gangrene from injury	2	1 died.
Thigh, for necrosis and ankylosis knee	1	Successful.
Hip, for gun-shot wound	1	Died from shock.
OPERATIONS ON THE SKIN, ETC	5	
Chronic ulcer	1	Skin grafting.
Ingrown nail	4	Nail removed.

SELECTED CASES FROM HOSPITAL PRACTICE.

A CASE OF LYMPHADENOMA.

By Passed Assistant Surgeon S. T. Armstrong.

Aitken defines lymphadenoma, or Hodgkin's disease, as "a disease characterized by a peculiar white deposit in the spleen, sometimes also in the liver, kidney, and lungs (Wilks), and by an enormous enlargement of the lymphatic glands throughout the body, accompanied during life by a remarkable anæmia and disposition to anasarca." (Science and Practice of Medicine, Vol. II, p. 429.)

Osler gives a better definition: "A disease characterized by progressive hyperplasia of the lymph-glands, sometimes also of the spleen, with anæmia and the development of secondary lymphatic growths in various parts of the body." (System of Medicine, Pepper, Vol. III, p. 921.)

This disease, which Hodgkin first described (Medico-Chirurgical Transactions, London, 1832) as a "primitive affection of these bodies [lymphatic glands], and there is no reason to suppose it is due to inflammation or scrofula, nor, indeed, attributable to the formation of any adventitious structure," has since been known by his name, though Osler states (*op. cit.*, p. 922) that some of the cases Hodgkin reported "were undoubtedly examples of scrofulous glands."

Since that time various names have been applied to the disease: Malignant lymphoma (Billroth); Pseudo-leukæmia (Cohnheim); Lympho-sarcomata (Lücke); Anæmia lymphatica (Wilks); Scrofulous sarcoma (B. von Langenbeck); Adenie (Trousseau); Desmoid carcinoma (Wagner).

These various appellations seem to indicate that to the different authors thereof certain pathological lesions were more distinctly prominent than others. Billroth says: "In diseases from the most varied causes the lymphatic glands almost always present a similar appearance." (General Surgical Pathology, p. 662.) Again: "The cellular infiltration may be so great that an exact distinction between lymphoma and glio-sarcoma may be impossible at some points." And again: "These malignant lymphomata, which Lucke calls lympho-sarcomata, cannot be anatomically distinguished from the benignant forms."

Osler, however, says: "We may recognize in the lymphatic glands, 1st, the local benign growth which seems nothing more than hypertrophy, lymphadenoma, and which may persist for years; 2d, a local malignant growth, lympho-sarcoma, which invades contiguous structures, and may be followed by metastasis, but there is not general involvement of the lymphatic tissues; and 3d, there is a generalized lymphoma, involving groups of glands in succession and the adenoid tissue throughout the body, usually accompanied by anæmia alone, in which case we term it Hodgkin's disease—sometimes by an excess of colorless corpuscles as well, when we call the affection lymphatic leukæmia."

In the following case the same difficulty Billroth refers to has been found in differentiating between a malignant lympho-sarcoma and the

essential features of the so-called Hodgkin's disease. And, indeed, so great has this difficulty seemed to be the case in the literature of the subject that the conclusion would seem justifiable that the former is but a more aggravated type of the latter.

As in the majority of such cases the patient was a male and under forty years of age, but unlike the majority the internal glands alone were prominently affected, and there were three tumors found, *post mortem*, in the brain.

J. H. (negro), aged 24 years, a native of Mississippi, was admitted to the United States Marine Hospital, Memphis, Tenn., on February 11, 1886, and died therein March 15.

The patient was of medium height, slender, and presented no abnormal appearance in his movements or conversation. He stated he had been unwell for several days previous to his admission, suffering from dyspnœa and pain in his chest. The physical symptoms indicated an acute bronchitis, and, though the febrile movement (*vide* chart) was not controlled, the treatment afforded such relief of the more urgent symptoms that he requested and was granted permission to sit up. He was about the ward, suffering no inconvenience, until February 18, when watery evacuations occurred from the bowels. Subsequently his tongue became dry and furred, the abdomen tender, the evacuations uncontrolled by the usual medication, and a general typhoid condition was present. A case of enteric fever, convalescent, in the bed opposite, confirmed the opinion of the probable cause and disease.

On March 1 the night orderly reported that about 3 o'clock a. m. he sang and talked, ceasing when ordered so to do, but apparently unconscious of what he was doing. This delirium lasted about half an hour, and was succeeded by a long period of unconsciousness. He had no recollection of the occurrence when questioned at the ward visit.

On the morning of March 3 he was dull and listless, his eyes moving in the direction of the voice, and his lips apparently attempting to frame a reply, though his whisperings would be unintelligible. The respiration was slow and regular; pulse good. This condition lasted until 4 o'clock in the afternoon, when he talked intelligibly and audibly; no noticeable after effects, as in an epileptic fit.

On the morning of March 4 he felt better, but the facial expression was changed, a *risus sardonicus* distorting the lower face. There was no inequality of the pupils nor other symptom of nerve lesion. An examination of the urine was negative.

The condition continued as above, the patient constantly losing strength, the bowels evacuating thin watery discharges, the abdomen tender, and no appetite, until March 12, when cerebral symptoms became more pronounced. He would make no effort to answer a question, and did not in any way indicate that he comprehended what was said. He lay flat on his back, with his eyelids closed; the pupils were normal and responsive to light. The mouth was tightly closed, and liquids in-

SPHYGMOGRAPHIC TRACINGS OF PULSE.

CASE OF JOHN HALL.



February 15, a. m.

Pressure, 40 grammes.

Pulse, 90.



February 20, a. m.

Pressure, 50 grammes.

Pulse, 90.



March 9, p. m.

Pressure, 50 grammes.

Pulse, 102.

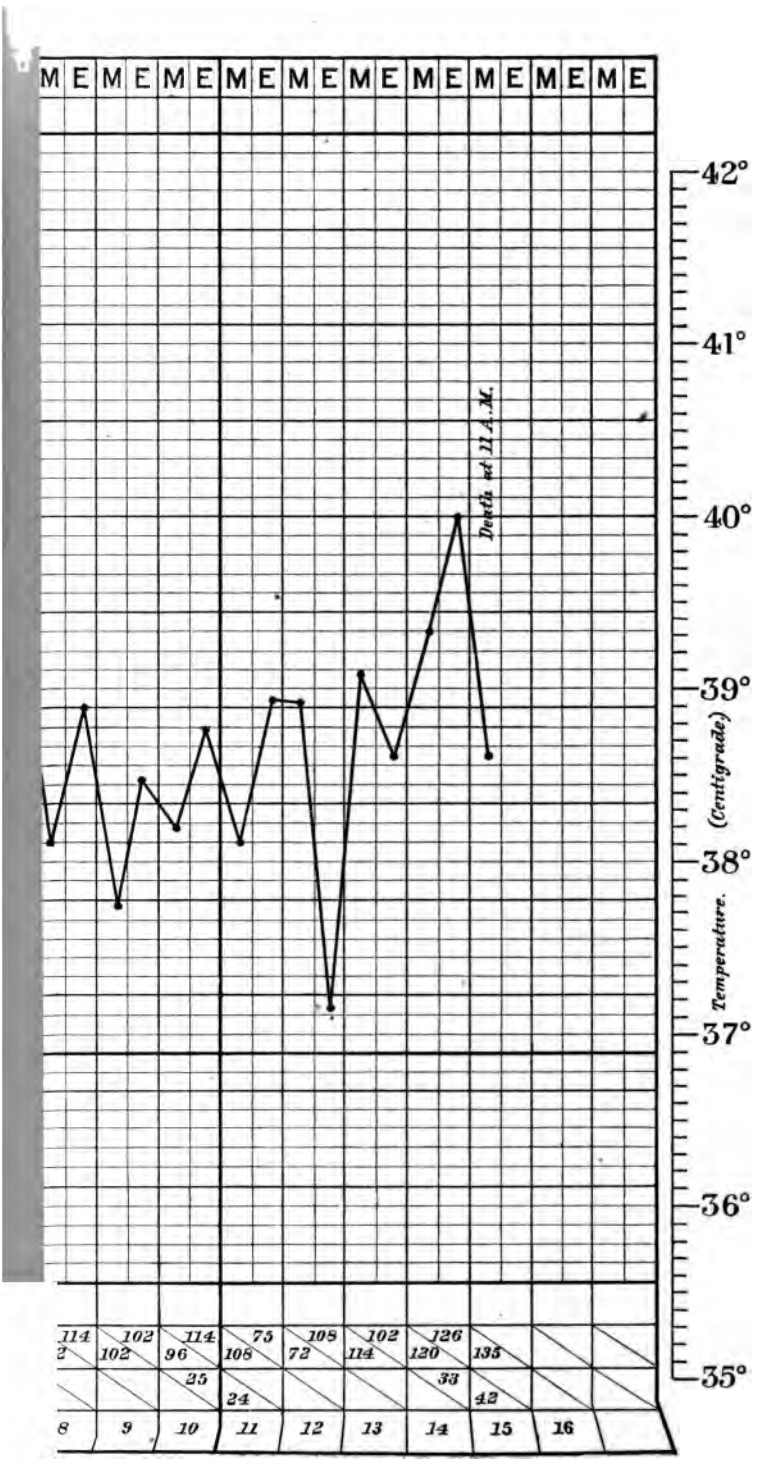


March 12, p. m.

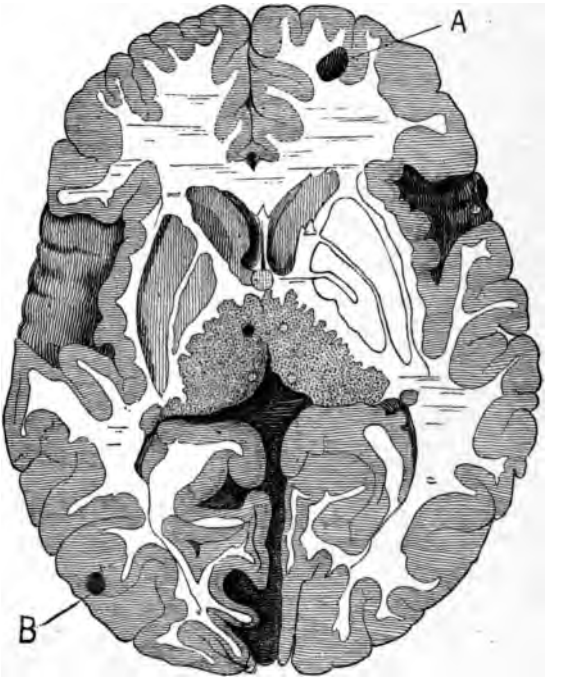
Pressure, —.

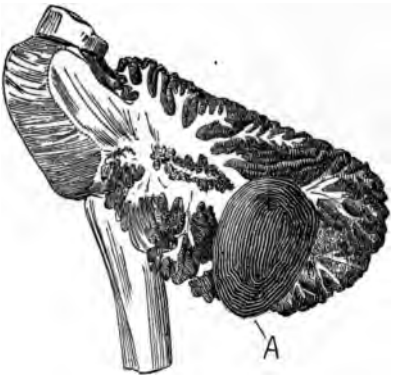
Pulse, 108.

Face page 120.


M E M E M E M E M E M E M E M E M E M E M E
42°
41°
40°
39°
38°
37°
36°
35°
Temperature. (Centigrade)
Death at 11 A.M.
114 102 114 75 108 102 126
2 102 96 108 72 114 120 135
25 33
24 42
8 9 10 11 12 13 14 15 16

CEREBRAL TUMORS IN CASE OF LYMPHADENOMA.





Face page 121.

troduced between the teeth were swallowed with difficulty. Sphygmograph tracings appended herewith indicate the character of the pulse, and tracings on three other dates are included in order to afford a means of comparison.

The patient remained in the condition last noted until the morning of March 15, when death occurred.

The necropsy was made six hours after death; *rigor mortis* established.

On removing the calvarium the frontal sinuses were found dilated and filled with a flaky purulent matter; the left sinus was more dilated than the right, and it was estimated that the capacity was between 20 and 30 cubic centimetres. The sphenoidal sinuses were also dilated, contained purulent matter, and the left sinus was largest. No abnormality was found in the nasal meatuses.

The meninges and brain appeared normal, the brain weighing 1,243 grams. In making a horizontal section of the brain, about the level of floor of the lateral ventricles, two yellow ovoid tumors were found, as depicted in the accompanying illustration. One on the right side, involving the gray matter of the second frontal convolution, of a diameter of 12 millimetres, and apparently in a capsule of fibrous tissue, permitting an easy separation from the adjacent cerebral substance; its development seemed to have been at the expense of the latter, causing absorption, but no involvement thereof. The other, similar in shape and appearance and 8 millimetres in diameter, on a lower plane, and on the left side, about the region of the angular convolution. In removing the cerebellum a small adhesion had been noticed on the right side, between the inferior surface of the right lobe and the cerebellar fossa of the occipital bone; on making a section of the cerebellum a tumor was found occupying the posterior portion of the right lobe of the cerebellum, as shown in the illustration. It presented a similar appearance to the others, was 20 millimetres in diameter, and could be separated from the adjacent cerebellar structure. A microscopical examination of the tumors presented a large amount of connective stroma with small round cells, the latter not present as numerously as in gliosarcoma.

Thoracic cavity.—The right lung weighed 613 grammes; the pulmonary pleura was discolored by carbon deposit. On section a number of small spherical bodies, about the size of miliary tubercles, were found; they were firm, and exhibited no evidence of cheesy degeneration. The left lung weighed 765 grammes, and was similar in its pathological features to the right. Microscopical examination: The alveolar septa, as well as the epithelial cells, were infiltrated with small round cells, similar in size to those found in the brain tumors. The heart weighed 229 grammes, and was normal. The bronchial glands were enlarged, averaging thesize of an almond, indurated, and on section were pigmented. Microscopically the connective tissue was increased, and the small round cells (lymph corpuscles?) not markedly numerous.

Abdominal cavity.—The omentum was locally adherent to the parietal peritoneum by old fibrinous adhesions; and the viscera were likewise attached to the neighboring peritoneum in several places. Displacing the intestines, and occupying the center of the abdominal cavity, was a large nodular mass of enlarged mesenteric glands of a yellow and pink color. The glands varied in size from a filbert to a goose egg, were very hard, and on section presented the same color as externally. The stomach and intestines, which were normal, were removed; the ileum passed posterior to the mass, and was compressed by it. The lymphatic glands behind the peritoneum, about the great vessels, were also enlarged, and the aorta was slightly compressed by the circumscribing mass. The glands were similar in color to the mesenteric glands, presented microscopically the same appearance as the bronchial glands, and the entire mass weighed 1,205 grammes. There was no central softening nor degeneration of the glands as is found in tuberculosis, nor were there miliary tubercles deposited in the intestinal walls as usual in tuberculous cases.

The liver weighed 1,971 grammes, on section cut with difficulty; gall-bladder normal. Microscopically the small, round cells were found generally disseminated.

The spleen weighed 1,440 grammes; it was pear-shaped, and on section was studded with small gray nodules, similar to those noted in the lung. Microscopically the small, round cells were generally diffused. The lymphatic glands at the hilus of the spleen were enlarged and indurated, and similar to those in the mesentery.

The right kidney weighed 184 grammes, and was normal.

The left kidney weighed 205 grammes; was of a pink color externally, cut with considerable resistance, but presented no abnormal appearance macroscopically; but microscopically the entire gland was filled with the small, round cells.

The right supra-renal capsule was mottled yellow, and was larger than usual. The left supra renal capsule was very much enlarged; over half the gland of a yellow color. Each was indurated, and on microscopic examination its tissue was found filled with the round cells.

There was no noticeable enlargement of the external lymphatic glands, and the color of the patient obscured the bronzing of the skin which would in all probability have occurred in a white man. The difficulty and error of the diagnosis are comprehensible in the light of the necropsy.

A feature for consideration is the rapid development of the cerebral tumors, undoubtedly within a month, as no nervous symptom appeared until about the fifteenth day after admission, and it is scarcely possible that three tumors could occupy different localities of the brain for any length of time without causing more or less decided cerebral symptoms.

FREQUENCY OF DISEASE IN THE WHITE AND COLORED RACES.

A COMPARISON OF THE FREQUENCY OF DISEASE IN THE WHITE AND COLORED RACES AT THE UNITED STATES MARINE HOSPITAL, MEMPHIS, TENN., DURING THE QUINQUENNIUM 1881-'86.

By Passed Assistant Surgeon S. T. Armstrong.

While the position of the negro has materially changed since 1849, when Dr. E. D. Fenner wrote: "Everything relative to the negro race, which constitutes so large a portion of our population, is worthy the consideration of the inhabitants of the Southern States,"[a] yet the increased importance of the black race to-day, as a political and social factor, makes the quotation, if possible, more applicable now than then.

In the first annual report of this Service,[b] the statistical tables exhibited the number of cases treated of each disease in the white and the colored race, but excepting at the parts situated on the Ohio and Mississippi Rivers and the Gulf of Mexico, the number of colored patients was so small that comparatively no deductions of the relative frequency of disease or of mortality could be made from the figures given. It was, presumably, on this account that in the subsequent reports this method of racial distinction was abandoned.

In the present paper the medical statistics of the Service at this port during the past five years are presented. As discrepancies can be noted by comparing the tables given herewith with the totals of patients treated, as given in the tables of exhibits of operations of the Service in the annual reports for each of the years herein mentioned, it is necessary to explain that where, in a few instances, a patient was treated twice during the year for the same chronic disease, only a single case of that disease has been counted, instead of two, as is customary in all hospitals.

In a consideration of the frequency of disease in the different races on the Mississippi River, it is necessary to recollect the essential distinction between the standing of a negro seaman on a sea going vessel and that of a cabin boy, deck-hand, fireman, or roustabout on a steamboat on the Mississippi River or its tributaries. While with the former class the occupation is a permanent one, with the latter class it is transitory.

a Southern Medical Reports. E. D. Fenner. New Orleans, 1849. p. 336.

b First Annual Report of the U. S. Marine Hospital Service. Washington, 1872.

Though they will claim from one to twenty years' employment on the river, a cross-examination usually proves that more than half the alleged period was spent in occupation ashore. In the fall and winter the cotton-fields and the sugar plantations exercise a powerful attraction, causing such a dearth of roustabouts that frequently in winter in New Orleans it is difficult to obtain men for wages varying from $75 to $90 per month. In the summer low water and limited demand for carrying facilities cause a number of steamboats to lay up, and some of the roustabouts engage in levee and railroad work, others going to northern waters.

From this cursory reference it may be seen that other factors are at work in the genesis of disease among rivermen besides the usually wretched housing on vessels, the poorly cooked food, the exposure to inclement weather, the absolute disregard of personal hygiene, and many lesser sanitary evils, attention to all of which has been called in the papers of the late Surgeon Orsamus Smith (Report on the River Boatmen of the Lower Mississippi, Annual Report U. S. Marine Hospital Service, 1873), Surgeons P. H. Bailhache (The Freedmen and the Service on the Ohio, Annual Report U. S. Marine Hospital Service, 1874), Horace Wardner (Diseases of River Men, their Causes, and Prevention, Annual Report U. S. Marine Hospital Service, 1874), and Walter Wyman (River Exposure and its Effects upon the Lungs, Annual Report U. S. Marine Hospital Service, 1876); and Hygiene of the Steamboats on the Ohio River, Annual Report U. S. Marine Hospital Service, 1882).

Nor can we depend upon a consideration of locality, as a cabin boy or roustabout may work on the Upper Mississippi in summer and the lower Mississippi in winter, following the ways of commerce. Hence a seaman may be treated in one locality for a disease acquired in another; or the disease may be the result of exposure while engaged in some other occupation.

In the year 1872 there were treated in the contract hospital at this port 148 white and 118 negro patients; of the former 10 (6.7 per cent.), of the latter 12 (10 per cent.) died.

In the five years, from July, 1881, to July, 1886, during which period the patients were under the treatment of officers of this Service, there were treated in the hospital 403 white and 525 negro patients; of the former 21 (5.2 per cent), of the latter 56 (10.6 per cent.) died. There were treated in the office, generally for minor ailments, although occasionally severer cases of disease in patients who preferred to live at home, 1,598 white, and 1,311 negro patients.

From these figures it is seen that during the quinquennium 165 more white than negro patients were treated, although there are usually more negroes than whites employed on a steamboat and their rating renders them more liable to exposure and accident.

The only explanation that can be given for this numerical inequality *is the aversion a negro* entertains for a hospital. If he feels indisposed,

instead of seeking office treatment, he either disregards his malaise or uses the domestic remedy suggested by some old negress. If his illness prove more serious he will often remain in a weather-boarded hut, exposed to the wind and rain which enters through numerous cracks and crannies, postponing from day to day his application for admission to the hospital. This is as potent a factor in the high mortality of the race as the exposure and accidents on a vessel.

In the earliest paper on this subject that has been accessible the writer, Dr. E. M. Pendleton, of Sparta, Ga., found the ratio of deaths 2.57 per cent. for the whites against 3.54 per cent. for the blacks. He adds: "Cases among the blacks are more frequently delayed until it is too late to effect much." (On the Susceptibility of the Caucasian and African Races to the Different Classes of Disease, Southern Medical and Surgical Journal, November, 1849.)

In the annual report of the board of health of Memphis for the year 1885, the mortality in the whites was 1.65 per cent. and in the blacks 3.69 per cent., in proportion to the respective population but not in proportion to cases of disease.

In Charity Hospital, New Orleans, La., there were treated during the four years, 1881–'84,[c] inclusive, 22,644 whites and 6,582 black patients; there were 2,252 deaths (9.9 per cent.) among the whites and 1,376 deaths (20.9 per cent.) among the blacks.

During the same years there were treated in the City Hospital, Saint Louis, Mo., 19,045 white, and 1,595 black patients; there were 1,614 deaths (8.4 per cent.) among the whites, and 274 deaths (17.1 per cent.) among the blacks. (Reports of the Health Department of the city of Saint Louis, Mo., 1882–'85, inclusive.)

From these statistics, which are introduced for the purpose of comparison, it is seen that the mortality among negroes is double that among whites.

The appended tables would have been uselessly lengthened had all the diseases treated been enumerated. Accordingly beyond general diseases affecting the entire body, and certain more prominent local diseases, the cases are aggregated under the general title of the locality affected.

In the hospital statistics small-pox has a ratio of .2+ per cent. in the whites, and 4 per cent. in the negroes, with a mortality of 61 per cent. in the latter; dysentery, 3.4 per cent., with 7 per cent. of deaths among the whites, and 3.8 per cent. with 30 per cent. of deaths among the negroes; malarial fevers, 31 per cent. among the whites and 15.6 per cent. among the negroes; venereal diseases and sequelæ, 9— per cent. among the whites and 15— per cent. among the negroes; alcoholism, 2+ per cent. among the whites and no case among the negroes; diseases of the nervous system, 2 per cent. among the whites and 1— per cent. among the negroes; diseases of the respiratory system (including tubercle), 9.1 per cent. among the whites, 14 per cent. among the negroes, with a mor-

[c] Report of Board of Administrators of Charity Hospital, 1881–1884.

tality of 22.4 per cent. among the former, and 24.3 per cent. among the latter; diarrhœa, 8.4 per cent. among the whites, 6.2 per cent. among the negroes; injuries, 10.1 per cent. among the whites, 16.7 per cent. among the negroes.

In the out-patient statistics dysentery has a ratio of 1.5 per cent. among the whites, and 1.9per cent. among the negroes; malarial fevers, 25.3 per cent. among the whites, and 12.6 per cent. among the negroes; syphilis, 9.2—per cent. among the whites, and 16.4—per cent. among the negroes; gonorrhœa, 8.8 per cent. among the whites, 12.6 per cent. among the negroes; rheumatism, 3.9 per cent. among the whites, 5.6 among the negroes; diseases of the respiratory system, including tubercle, 10.6 per cent. among the whites, 8.7 per cent. among the negroes. These troubles cover over fifty per cent. of the cases, the remaining diseases being of small percentage.

It is scarcely necessary to enter into any further consideration of a comparison of the diseases affecting the two races. One note is necessary; excepting three cases of disease in negro chambermaids, all the cases were in males.

While it might be desirable to have a report on a larger number of cases, yet the relation of the mortality of the two races is so exact in the three sources of comparison above noted that it would seem a justifiable inference that in all probability the relative proportion of each disease would be very close to that in the tables herewith appended.

Table of Hospital Relief.

1882.

Diseases of whole body.	Cases.		Average treated.		Deaths.	
	W.	C.	W.	C.	W.	C.
Small-pox	1	8	10	15		5
Dysentery		4		18		2
Intermittent fever	11	7	10	5		
Remittent fever	3	4	16	16		
Phagedæna, erysipelas, &c.	1		20			
Syphilis:						
Primary, soft chancre	1	5	5	12		
Secondary	3	3	30	21		
Gonorrhœa and sequelæ	1		86			
Alcoholism	1		5		1	
Rheumatism		2		13		
Tubercle	1		7		1	
Nervous system	2		61		1	
Diseases of the ear	1		15			
Diseases of respiratory system	2	2	9	25		
a. Bronchitis	2	6	8	12		
b. Pneumonia		1		15		
Diseases of digestive system:						
a Of intestine, rectum, and anus		1		5		
b. Diarrhœa	5	4	8	8		
Diseases of urinary system	2	1	17	15		1
a Urethra	2		32			
b Testicle		1		25		
Diseases of organs of locomotion		1		9		
Diseases of skin	3	6	11	17		
Injuries of head, &c	1	3	8	5		
Injuries of trunk		2		15		
Injuries of upper extremities	1	1	19	39		
Injuries of lower extremities	4	1	13	59		
Miscellaneous		1		3		
Total	48	64			3	8

Table of Hospital Relief—Continued.

1883.

Diseases of whole body.	Cases.		Average treated.		Deaths.	
	W.	C.	W.	C.	W.	C.
Small pox		9		27		5
Other exanthemata	1		7			
Dysentery	8	4	19	35		1
Intermittent fever	6	3	7	4		
Remittent fever	14	8	13	12		1
Phagedæna, erysepilas, &c	2		4			
Syphilis:						
Primary, soft chancre	5	13	24	20		
Secondary		3		19		
Tertiary	1	1	11	28		1
Gonorrhœa and sequelæ	1		68			
Alcoholism	3		7			
Rheumatism	2	1	35	11		
Tubercle	3	1	34	26	1	
Miscellaneous		2		19		
Diseases of the circulatory system	1		18			
Diseases of respiratory system		3		19		
a. Bronchitis	4	4	12	20		
b. Pneumonia	3	11	20	17		3
Diseases of digestive system	1	1	4	3		
a. Diarrhœa	5	4	14	8		
b. Diseases of liver		1		15		
Diseases of lymphatic system		2		5		
Diseases of urinary system	1	1	139	33		
Diseases of generative system	1		12			
a. Urethra	1	1	6	111		
b. Testicle	1	1	11	1		
Diseases of organs of locomotion	1	1	5	30		
Diseases of skin	3	4	33	14		
Injuries of head, &c		2		18		
Injuries of trunk	2	7	10	17		1
Injuries of upper extremities		3		7		
Injuries of lower extremities	2	9	53	19		
Total	72	100			1	12

1884.

Small-pox		4		11		3
Enteric fever	1	1	17	1		1
Other exanthemata		1		20		
Dysentery		2		6		1
Intermittent fever	14	16	9	6		
Remittent fever	18	12	7	7	1	
Syphilis:						
Primary, soft chancre	1	2	10	16		
Secondary	6	4	15	5		
Gonorrhœa and sequelæ	3	4	10	18		
Alcoholism	2		4			
Rheumatism	2	2	6	9		
Tubercle	1	1	1	1	1	1
Miscellaneous	2	2	47	35	1	1
Nervous system		1		6		
Diseases of the ear	1		3			
Diseases of respiratory system	2	2	8	5	1	1
a. Pneumonia	2	1	9	1	1	1
Diseases of digestive system:						
a. Of intestine, rectum, and anus	1		10			
b. Diarrhœa	8	6	9	4		1
c. Diseases of liver		1		11		1
Diseases of lymphatic system	2		7			
a. Urethra		2	32			
b. Testicle		2		53		
Diseases of organs of locomotion		2		19		
Diseases of skin	3	6	32	26		
Injuries of head, &c		3		7		
Injuries of trunk	2	5	12	26		
Injuries of upper extremities		4		13		
Injuries of lower extremities	4	6	15	24	1	
Total	75	92			6	11

Table of Hospital Relief—Continued.

1885.

Diseases of whole body.	Cases.		Average treated.		Deaths.	
	W.	C.	W.	C.	W.	C.
Enteric fever	2		29		1	
Other exanthemata		2		11		
Dysentery	4	5	16	8	1	2
Intermittent fever	8	8	5	5		
Remittent fever	29	8	13	6		
Phagedæna, erysipelas, &c	3	2	22	73		1
Syphilis, primary, soft chancre	1	13	11	17		
Secondary	4	2	13	27		
Tertiary	1		9		1	
Gonorrhœa and sequelæ	1	3	7	12		
Animal parasites	1		3			
Alcoholism	2		5			
Rheumatism	3	2	43	9		
Tubercle	4	7	98	199	1	5
Nervous system	5	4	52	16		
Diseases of eye		2		29		
Diseases of circulatory system	3	2	41	21		1
Diseases of respiratory system	1	5	11	46		1
a. Bronchitis	2	4	29	24		
b. Pneumonia	2	2	24	7		1
Diseases of digestive system	2		20			
a. Of intestine, rectum, and anus	3	3	33	27		1
b. Diarrhœa	11	10	18	7		2
c. Diseases of liver	4	1	11	22	1	
Diseases of lymphatic system	2	2	25	31	1	
Diseases of urinary system	2	1	30	8		1
a. Urethra	4	2	19	86		
b. Penis		1		9		
c. Testicle	3	1	16	6		
Diseases of skin	6	11	12	14	1	
Injuries of head, &c	3	6	31	3		2
Injuries of upper extremities	4	4	33	16		
Injuries of lower extremities	6	15	16	14		
Total	126	128			7	17

1886.

Enteric fever	1		28			
Other exanthemata		1		4		
Dysentery	2	5	7	5		
Intermittent fever	6	5	4	6		
Remittent fever	16	11	14	5		
Phagedæna, erysipelas, &c	1	1	16	70		
Syphilis, primary, soft chancre		5		17		
Secondary	4	8	11	7		
Tertiary		2		19		
Gonorrhœa and sequelæ	3	9	12	8		
Animal parasites	1		4			
Alcoholism	2		39			
Rheumatism	2	5	23	10		
Tubercle	3	4	17	21		1
Miscellaneous	1	1	1	9	1	
Nervous system	3		13		1	
Diseases of eye	1	2	4	29		
Diseases of ear	1		37			
Diseases of circulatory system	1		41			
Diseases of respiratory system	1	5	62	13		1
a. Bronchitis	1	4	3	10		
b. Pneumonia	3	11	19	10	2	3
Diseases of digestive system	1		3			
a. Of intestine, rectum, and anus		1		17		1
b. Diarrhœa	5	9	7	5		
Diseases of lymphatic system	2	8	7	22		1
Diseases of urinary system	1		34			
a. Urethra	2		12			
b. Penis		10		11		
c. Testicle		2		16		
Diseases of organs of locomotion	1		3			
Diseases of skin	5	15	13	26		
Injuries of head, &c	4	4	4	19		
Injuries of trunk		2		10		1
Injuries of upper extremities	5	7	21	26		
Injuries of lower extremities	3	4	47	14		
Total	82	141			4	8

Table of Hospital Relief—Continued.

SUMMARY.

Diseases of whole body.	Cases.		Deaths.	
	W.	C.	W.	C.
Small-pox	1	21		13
Enteric fever	4	1	1	1
Other exanthemata	1	4		
Dysentery	14	20	1	6
Intermittent fever	45	39		
Remittent fever	80	43	1	1
Phagedæna, erysipelas, &c	7	3		1
Syphilis, primary, soft chancre	8	38		
Seconday	17	20		
Tertiary	2	3	1	1
Gonorrhœa and sequelæ	9	16		
Animal parasites	2			
Alcoholism	10		1	
Rheumatism	9	12		
Tubercle	12	13	4	7
Miscellaneous	3	5	2	1
Nervous system	10	5	2	
Diseases of eye	1	4		
Diseases of ear	3			
Diseases of circulatory system	5	2		1
Diseases of respiratory system	6	17	1	3
a. Bronchitis	9	18		
b. Pneumonia	10	26	3	8
Diseases of digestive system	4	1		
a. Of intestine, rectum, and anus	4	5		2
b. Diarrhœa	34	33		3
c. Diseases of liver	4	3	1	1
Diseases of lymphatic system	6	12	1	1
Diseases of urinary system	6	3		2
Diseases of generative system	1			
a. Urethra	9	5		
b. Penis		11		
c. Testicle	4	7		
Diseases of organs of locomotion	2	4		
Diseases of skin	20	42	1	
Injuries of head, &c	8	18		2
Injuries of trunk	4	16		2
Injuries of upper extremities	10	19		
Injuries of lower extremities	19	35	1	
Miscellaneous		1		
Total	403	525	21	56

Table of Hospital Relief—Continued.

RECAPITULATION.

Diseases of whole body.	1882.		1883.		1884.		1885.		1886.		Total.	
	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.
Cow-pox	19	63	2	8					1		21	72
Dysentery	1		7	9	4	4	7	1	5	11	24	25
Intermittent fever	56	25	128	26	58	19	32	12	39	27	313	109
Remittent fever	2	1	8	2	23	11	41	19	18	24	92	57
Phagedæna, erysipelas, &c	2		3						1		6	
Syphilis, primary, hard chancre	1	1	6	9			1	3	1	5	9	18
Soft chancre	6	13	13	20	15	21	7	32	12	33	53	119
Secondary	24	20	23	25	18	16	6	9	14	7	85	77
Gonorrhœa and sequelæ	18	18	42	38	32	37	27	21	22	52	141	166
Animal parasites		2			1					2	1	4
Alcoholism	1		5		1				1		8	
Rheumatism	6	9	13	10	20	19	9	13	14	23	62	74
Tubercle			4	2	2	4	2	1	4	7	12	14
Miscellaneous	2		7	1			1	2	3	2	13	5
Diseases of nervous system	2	2	10	5	13	10	9	4	12	17	46	38
Diseases of eye	3		1	2	3	3	1		4	7	12	12
Diseases of ear	2		4	1	2		2	1		4	10	6
Diseases of circulatory system	1		1	1	1	2		2	3	2	6	7
Diseases of respiratory system	2	3	2	1	4	3	2		2	6	12	13
a. Bronchitis	19	20	65	19	16	15	15	7	15	23	130	84
b. Pneumonia			5	2	1	2	1				7	4
Diseases of fauces, palate, nose, &c.	1	2	17	7	13	13	6	8	13	15	50	45
Diseases of digestive system	22	10	27	17	5	11	10	13	14	23	78	74
a. Diarrhœa	14	8	27	18	22	14	13	17	13	9	89	66
b. Of intestine, rectum, and anus	1	2	4	3	7	5	12	1	4	2	28	13
c. Liver	1		8	1	12	4	14	6	7	3	42	14
Diseases of lymphatic system	1		6	2	6	2	1	6	5	7	19	17
Diseases of urinary system	1	1	7	1	3		2			2	13	4
Diseases of generative system			1	2	1			1			2	3
a. Urethra			3	2	2	7	8		1	2	14	11
b. Penis			2	2	4	4	2	1		5	8	12
c. Testicles	1				4	1	4	3	2	1	11	5
Diseases of organs of locomotion			1	4		1			1		2	5
Diseases of skin	11	5	25	11	20	9	10	2	13	16	79	43
Injuries of head, &c	2	2	2	2	3	2	2	2	2	3	11	11
Injuries of trunk	5	3	3	7	2	3	1	4	7	3	18	20
Injuries of upper extremities	4	5	12	4	11	15	5	5	3	5	35	34
Injuries of power extremities	7	4	7	4	7	6	6	4	3	12	30	30
Miscellaneous			1		1				4		6	
Total	238	219	502	268	337	263	259	200	262	361	1,598	1,311

REPORT OF SEVEN CASES OF PENETRATING WOUNDS OF THE ABDOMEN—LAPAROTOMY IN TWO CASES.

By Passed Assistant Surgeon S. T. Armstrong.

It is neither within the province or purpose of this report to enter into the consideration of the various questions relating to penetrating wounds of the abdominal cavity. The following cases have fallen under the writer's observation and treatment, and are presented as a contribution to the statistical literature of this most important subject.

In the two fatal cases in which laparotomy was performed in neither was death the result of the operation. The successful laparotomies in similar cases, by Dr. W. T. Bull (The Medical News, February 14, 1885), and Surgeon-General John B. Hamilton (Journal of the American Medical Association, August 22, 1885), as well as the advice of Lawson Tait to immediately operate in peritonitis, afforded the precedent for operating in these cases.

Case I.—Penetrating knife-wound of abdomen. John Edwards, negro; aged 29; native of the Bahama Islands; was stabbed on the night of February 24, 1883, with a clasp-knife. The wound was to the left and two centimetres above the umbilicus, and was three centimetres in length. The man was admitted to the United States Marine Hospital, Key West, Fla., and Assistant Surgeon John Guitéras returned the protruded omentum, after first stanching the very profuse hemorrhage, and closing the wound with a silver-wire suture. The patient was kept perfectly quiet, and opium given internally. He was transferred to my charge February 25, and the same treatment continued until the 27th. No evidence of peritonitis existing, the treatment was stopped, and the patient discharged March 9, 1883.

Case II.—Penetrating knife-wound of tenth rib, and wound of spleen; G. J. ——; aged 23 years; negro. This case was reported in the Annual Report of the Supervising Surgeon-General of the Marine Hospital Service for 1884, page 199. The cicatrices were examined *post mortem*, the injury having been received several years earlier. If the hemorrhage from the spleen was very profuse, the blood caused no peritonitis.

Case III.—Penetrating wound of abdomen from falling on a dead tree. Douglas William, negro; aged 27; native of Alabama; was under

treatment in the United States Marine Hospital, Memphis, Tenn., in December, 1884, and in making a physical examination an enterocele was found on the left side just below the tenth rib. The separation of the muscles and aponeurosis from the rib afforded a sufficient space to push the skin covering the opening quite a distance within the abdominal cavity. The patient stated that in 1881 he was employed as a cowboy in Western Texas, and in running in some cattle on a dark night was thrown from his horse, falling on a dead tree, and a broken limb penetrating the abdomen. His cries for help brought the other herders to his aid, and as he was extricated from the limb his intestines prolapsed through the opening. Some water was soon obtained, the intestines washed and returned, and the wound sewed with an ordinary needle and thread. No physician was obtainable within two hundred miles. He thinks he was well within two weeks. This is an admirable illustration of the advantage of a pure atmosphere.

CASE IV.—Gunshot wound of abdomen; recovery. Martin Kugney, white; aged 25; native of Missouri; was admitted to the United States Marine Hospital, Memphis, Tenn., on October 14, 1884, for varicose saphenous, femoral, superficial circumflex ilii, and superficial epigastric inosculating with the external mammary veins of the left side. There was a slight enlargement of the superficial veins of right lower extremity. The epigastric vein was as thick as a lead pencil, quite tortuous, and evidently performing a compensatory circulation. On a close inspection of the abdomen a small cicatrix was found about three centimeters below and to the right of the umbilicus. The patient stated, on requesting information as to the cause of the wound, that he was a prisoner in the Missouri State penitentiary, and was shot by the guard. The missile was a rifle bullet; distance and position of guard uncertain. He was in the penitentiary hospital over a month, and thinks he was given opium only. After he recovered he noticed a gradually increasing enlargement of the veins, and consequent discomfort in laboring.

It is remarkable that this bullet should have pursued the path it seemed to have done without injuring the small intestines, although there are a few such cases on record. The bullet apparently was encysted in the region of, and occluded, the left common iliac vein.

CASE V.—Gunshot wound of the abdomen; recovery. This case is introduced for purposes of comparison with the former. As far as I am aware it has not been reported before. Abel G. Cox, white; miner; native of Pennsylvania; was under my treatment in the Saint Louis City Hospital in 1879 for what was considered incipient locomotor ataxia. He was a fairly stout, healthy looking man, affected with incoordination of movements of inferior extremities. He stated that on August 14, 1872, he was shot by a bullet from a Henry rifle, the ball entering some 3 inches to the left of the umbilicus and lodged in the back 1½ inches from the last lumbar vertebra, from which position it was cut out.

He was on the plains at the time, and was treated by such rude facilities as were at hand. His recovery was very slow, and he never fully recovered his strength.

It is quite possible in this case that the bullet traversed the abdomen circumferentially. But the symptoms simulating locomotor ataxia suggest that there was perforation and injury of the branches of the lumbar and sacral plexuses.

CASE VI.—Gunshot wound of the abdomen; laparotomy; death. George Bell, negro; aged 26; native of Georgia; was admitted to the United States Marine Hospital, Memphis, Tenn., on February 23, 1886. When first seen the patient had walked from the steamboat landing up a steep incline to the office in the custom-house. He was very weak, walked with the body well bent forward; his face wore an anxious expression, and he stated that every step gave him pain in his abdomen. He was shot on the night of February 20, his assailant standing a little to the right, the weapon a .38-caliber revolver, and the bullet entered the left side, penetrating the cartilage of the sixth rib. No wound of exit nor trace of the bullet could be found posteriorly. Auscultation evidenced no traumatism of the pleura. The abdomen was tender and tympanitic. The wound of entrance was occluded, and no attempt was made to introduce a probe.

The patient had lived two days, and although evidently losing strength, it was thought to his advantage to open the abdomen, examine the intestines, and treat the existing peritonitis by washing out the cavity.

The patient was transferred to the hospital, quickly bathed; placed on the operating table, and anæsthetized by Dr. R. M. Pate, of Memphis. An incision 9 centimetres long was made in the median line from a point about 5 centimetres below the xiphoid cartilage to within 2 centimetres of the umbilicus. The incision was not continued to the umbilicus, because a small opening existed at this point, and it was considered that this tendency to hernia would increase the risk of enterocele in the event of healing of the wound. The dissection was continued to the peritoneum, which was slit up on a grooved director, all bleeding vessels being ligated as soon as they appeared. The omentum, which presented at the opening, contained much fat and the blood vessels were greatly congested; it was pushed aside with some difficulty and the hand introduced into the cavity and pushed up to the costal cartilage opposite the point of entrance of the bullet. No evidence of adhesion or hemorrhage could be felt; the finger was pushed over the left lobe of the liver, around the stomach, and over the spleen and left kidney. This maneuver was accomplished after some little time, the distended intestines making the examination very difficult.

No gas escaped on opening the abdomen, so if perforation of the intestine had taken place the opening was adherent to an adjoining coil or had undergone a plastic adhesion and closure. The existing peri-

tonitis was attributed to the traumatism of the bullet. As no evidence of other lesion existed, the wound was carefully sutured and the patient put in bed, after receiving a hypodermatic injection of quinine and morphine. He recovered well from the operation, with a little nausea, however, which was partly relieved by cracked ice and champagne. At 7 o'clock P. M. his pulse was 72, temperature 38.3° C.; this was about the average rate of each during the night. He rested easily, the abdominal tenderness controlled by the morphine.

February 24, at ten o'clock A. M. his pulse was 102, temperature 38° C., respiration 27. Abdomen tender and tympanitic. The tube of a fountain syringe was attached to the drainage tube, and about 1,000 cubic centimetres of a boracic acid solution of a temperature of 37.6° C. injected into the abdominal cavity. The water as it was washed out was discolored with blood. As the peritoneal cavity was clean when examined the previous day, it was feared the discoloration was due to oozing from the wound. The injection caused some discomfort, and but little fluid could be injected at a time. He rested easily during the day, complained several times of nausea, and vomited small quantities of white glairy fluid. Champagne and ice partly controlled the nausea. At seven o'clock P. M. his pulse was 108, temperature 38 C. The abdominal tenderness was controlled by hypodermatic injections of morphine when required. About midnight he was more restless and his pulse was increasing in frequency and losing in volume.

February 25, ten o'clock A. M., his pulse was 120, temperature 38.2° C.; much weaker. The abdominal cavity was again washed out with the solution as above, and the water returned more deeply discolored by blood. Champagne and ice continued. He had two soft, dark, fecal evacuations, but the intestinal flatus remained the same. He died about six o'clock P. M.

The necropsy was made a few hours *post mortem*. No *rigor mortis*. Body of a well-nourished negro; no lesion except the wound over the sixth costal cartilage and the incision in the median line of the abdomen.

The brain weighed 1,345 grams, and was normal.

The right lung weighed 305 grams, and was normal. The left lung was adherent to the costal pleura by many old adhesions; otherwise normal; weight 265 grammes.

Heart normal; weight 330 grammes.

The bullet passed through the cartilage of the sixth left rib, the entrance wound being closed by the swelling of the tissues; it penetrated the left lobe of the liver, within an inch of the edge, the clean circular wound being filled with blood coagulum, and no evidence of hemorrhage from it. The liver was otherwise normal, weighing 1,460 grammes. The bullet passed across the lesser curvature of the stomach, slitting it in its course. This wound was 1 centimetre long, and was closed by plastic exudate; but the effect of the impact on the peritoneal surface

of the stomach caused a bluish-black discoloration extending from the œsophageal opening to the pylorus. The intestines were distended, the blood vessels injected, and on the left side a layer of lymph 1 inch broad extended from the median incision over the intestines towards the colon. This layer was well formed and surrounded the drainage tube, effectually closing the lateral openings thereof. Removing the intestines blood clot was found both posterior to and in the peritoneum, and a bloody fluid was in the pelvic cavity. The bullet was lodged in the middle of the anterior surface of the body of the first lumbar vertebra. The adjoining locality had been so disturbed in removing the intestines that it was not possible to definitely locate vessel from which the hemorrhage occurred, but from the position it was most probably the lumbar artery. The spleen had a thick opaque capsule; weight 205 grammes. Right kidney weighed 162 grammes, the left 161 grammes; both were greatly congested.

Had the hemorrhage in this case been definitely located it would have been impossible to stop it. From the necropsy report it may be seen that no ill result followed the laparotomy.

CASE VII.—Gunshot wound of ileum, with perforation of the colon; perforation of intestine; peritonitis; laparotomy; death.

William Jackson, negro; aged 18; native of Tennessee; admitted to United States Marine Hospital, Memphis, Tenn., March 8, 1886, for lobular pneumonia. Death from peritonitis from perforation, March 25, 1886.

The first history of this case was communicated by Acting Assistant Surgeon John E. Bready, United States Marine-Hospital Service, Dubuque, Iowa, who admitted this man to the hospital on August 5, 1885, for a gunshot wound of the left side, the missile entering near the crest of the ilium and posterior to the anterior superior spinous process. Doctor Bready did not succeed in probing the wound more than two centimetres when the path of the bullet was lost. The patient complained of numbness and weakness in the left lower extremity. Morphine sulphate .016 gm. was given every half hour until the pain was relieved. A one per cent. solution of thymol was applied to the wound. Strict rest in bed was required. The patient placed on milk diet. August 7 oleum ricini was given, and lemonade allowed. August 11 he was placed on full diet, and was discharged, recovered, August 23.

The patient seems to have been a very disorderly fellow, as the next place he was heard from was the Saint Louis workhouse, from whence he was admitted into the City Hospital on September 7, 1885. Through the kindness of Dr. D. V. Dean, the superintendent of that institution, I obtained his history while treated there.

When admitted the assistant physician, Dr. Brinkman, found two sores on the prepuce, also a wound of the left hip, the probe passing into the left ilium, and the bone being denuded. On September 9 Dr. H. D. Stauf reports that Dr. Dean enlarged the opening, extracted

several pieces of detached bone and a small piece of lead. The bullet was not found, its course being almost directly upward towards the crest of the ilium. On October 5 the patient was discharged. Some localized tenderness about the hip remained and the sinus was unhealed.

On November 9 the patient was readmitted to the City Hospital on account of the unhealed sinus, the assistant physician, Dr. William T. Porter, writing a history which supplied several facts overlooked by the former reporters. The weapon was a .32 caliber pistol, and was fired at a distance of about 8 feet from the patient's body. The assailant was described as a tall man, and the pistol was aimed at the patient's abdomen, but he turned as it was fired, and the ball struck his hip. November 13 Doctor Dean found the sinus was 4 inches deep, and a small piece of bone was removed from the ilium. The patient was dismissed November 16 for disorderly conduct. He was again admitted to the hospital on November 27, the sinus still the same. No marked improvement seemed to follow his further sojourn in the institution, and he was discharged December 18, 1885.

He was admitted to the United States Marine Hospital, Memphis, Tenn., March 8, 1886, for pneumonia of the left lung. The disease presented no unusual variation, and by March 16 his temperature was normal, the lung evidently undergoing resolution, and the general condition excellent. On March 10 he had complained of soreness in his left hip, exhibited the cicatrix, and said he had been shot; but little attention was paid to his complaint and only a cursory glance given the cicatrix. March 14 he stated that the scar was swollen and very painful, and on examination it fluctuated. Incising it a quantity of brown pus, of a fecal odor, and gas escaped through the cut. A probe introduced into the opening passed upward and inward through a foramen in the ilium, and was arrested at a distance of six centimetres. Poultices were applied locally and warm-water injections used every day; at no time, however, was there any fecal discharge, although a fecal odor was frequently noticed. A filiform bougie was used instead of a probe, and it passed into the cavity at much greater depth.

The patient was up, walking about every day, suffering no discomfort from the sinus nor his lung.

During the night of March 20 he felt a severe pain in his left side, the night-orderly giving him several doses of a bromide of potash solution. On the morning of March 21 his temperature was 38° C.; he was kept quiet in bed, and a little quinine ordered. In the evening his temperature was 38.7° C., pulse 108; morphine and quinine were given through the night. March 22, his temperature in the morning was 41° C., pulse 120; his abdomen was tender and his face wore an anxious expression; quinine was continued through the day, and reduced his temperature in the evening to 37.6° C., pulse 84; the medicine was continued during the night. On the morning of March 23 his pulse was 120, temperature 37.6° C. The abdominal tenderness was now general

instead of localized on the left side, and it was diagnosticated that the peritonitis was either the result of perforation or rupture of a pelvic abscess in the region of the left iliac fossa.

The sinus pointed to the latter as the more probable cause, and open treatment was decided upon. The operation was to make an incision over the crest of the ilium, as it was thought that the colon had been wounded, and communicated with the abscess cavity. If so, a lateral incision would have made the injury more accessible than the median abdominal cut, usually followed.

On the afternoon of March 23 he was anæsthetized, and, assisted by Dr. R. M. Pate, of Memphis, and Hospital Steward W. H. Stickle, I made an incision ten centimetres long, just above the crest of the left ilium; a careful dissection was made to the peritoneum, ligating all vessels *en route*. Incising the peritoneum I found to my surprise that the colon was so adherent by old adhesions that it was not even possible to introduce the finger into the cavity. From the course of the ball it was thought that a general peritonitis had been originally caused, that these old adhesions were general, and the operation would fail of accomplishing its purpose.

The wound was dressed, and the patient recovered well from the anæsthetic. At six o'clock P. M. his temperature was 40.4° C., his pulse 120, his respiration 38. Quinine and morphine were given during the night, and his temperature was gradually reduced.

At eight o'clock on the morning of March 24 his temperature was 38.2° C., pulse 120, respiration 39. The treatment was continued during the day. He had three passages from the bowels; no discharge from the operation wound or the sinus. He complained of great hunger, desiring something more substantial than milk and cracked ice. At six o'clock P. M. his temperature was 39° C., pulse 132, respiration 27. Under hypodermatic injections of atropine and morphine he rested easily during the day and night.

At eight o'clock A. M. March 25, his temperature was 38.9° C., pulse 120, respiration 39. He said the only thing that hurt him was his stomach, and referred the greatest pain to the left hypochondriac region. During the day he grew weaker, and, without any increase of temperature or pulse, died at four o'clock P. M.

The necropsy was made twenty-four hours *post mortem*. Body of a young healthy negro. The right lung weighed 669 grammes; normal. The left lung weighed 560 grammes, and was in stage of red hepatization. The heart weighed 395 grammes. The abdominal cavity was filled with purulent fluid, and exudated fecal matter. A rupture was found in the ileum, although this section of the intestine presented no special sign of disease. There were no adhesions of the small intestines, but the colon in its entire continuity was unusually firmly adherent; and on the left side, just at the external concavity of the sigmoid flexure, was attached to the parietal peritoneum. On freeing it a very small

circular aperture, communicating with the iliac sinus, was found. There was a slight exfoliation of bone on the external table of the ilium, about the aperture of the foramen; otherwise the bone was normal. No wound of exit could be found in the colon, nor could the bullet be found in the abdominal cavity. It was supposed that the bowels may have been filled with fæces, the bullet been impacted therein, and discharged in an evacuation. The liver was fatty; weighed 2,354 grammes. The pancreas weighed 155 grammes, and the spleen 335 grammes; each normal. The right kidney weighed 219 grammes; the left, 240 grammes; both were fatty.

As far as the original wound was concerned, the necropsy showed that it would have been of no danger to the patient's life. The opening in the sigmoid flexure was closed by one of the intestinal folds, thus preventing the extravasation of the fecal matter.

ENTIRE EXCISION OF THE OS CALCIS.

By Passed Assistant Surgeon R. P. M. Ames.

Caries or necrosis of the tarsus are diseases for which excision at the present day is most commonly required, and it has long since been demonstrated that the tarsal bones are the ones most liable to suffer in this way.

Caries or necrosis of the os calcis (calcaneum), the largest of the tarsal bones, the one which, with its articulations, forms an arch that under ordinary circumstances supports half the entire weight of the body, and the one whose removal would, from an examination of the adjoining bones, appear to be followed by weakness and distortion of the tarsus, if not complete loss of function, is then the subject under our consideration. Prior to 1848, when Mr. Henry Hancock removed the right calcaneum from an adult in Charing Cross Hospital, very little is found on record concerning this operation.

Monteggia, of Milan, is said to have first performed excision of the os calcis in 1814,[a] and it is recorded that Dupuytren,[b] in one of his lectures in 1816, stated that he had seen the os calcis in an infant reproduced entire, but whether after an operation or as a result of disease is not mentioned. He, however, reports four cases in 1833 on which he had operated.[c] Roux, of Paris, also excised this bone.

For many years the operation was regarded with distrust, and the opinions of eminent surgeons differed widely upon the subject, but time and experience have at last demonstrated that the objections to excisions of the calcaneum were mostly hypothetical, and as vague as the venerable Paré, who held fracture of the calcaneum to be a fatal injury in consequence of the laceration of the numerous vessels connected with the bone.[d] Moreau was opposed to the operation if the tendo Achillis had to be divided, and states that "if the case be such that the tendo Achillis must be destroyed, it would be better to amputate the limb."[e] Following the publication of Mr. Hancock's case, the objections to the operation gradually disappeared, and we find a report of ten cases by T. Martineau Greenhow, esq., in the British and Foreign Medico-Chirurgical Review of July, 1853. To Mr. Greenhow is prop-

a Excision of Joints, by Richard M. Hodges, M. D., Boston, 1861.
b Mott's translation of Velpeau, vol. 1.
c Mott's Velpeau, vol. 2 page 760, *et seq.*
d Desault's Surgery, translated by C. Caldwell, M. D., Philadelphia, 1811.
e London Lancet, November 2 and 9, 1867.

erly due the credit of placing the operation on a substantial basis before the profession.

Mr. Hamilton operated in 1856, and Mr. Thomas H. Wakley successfully removed the os calcis and astragalus in December, 1847.

Dr. O. Heyfelder, in his Lehrbuch der Resectionen,[f] reports 9 cases, and Mr. Hancock gives the particulars of 7 more in the London Lancet of November 2 and 9, 1867.[e] The operation was adopted by Humphrey, Cann, Fergusson, Teale, Pemberton, Folker, the two Lansdowns, Gibb, Erichsen, and others. In 1870 Dr. F. A. Burrall, of New York,[g] published an elaborate and statistical report of this operation from an analysis of 48 cases, in all of which the entire bone was removed, with one exception; in that case the tuberosity was left. Dr. Burrall's report covers the period from 1823 to 1870, and of the entire 48 cases 33 were successful. Of the remaining 15 cases 2 died, one from diphtheria, contracted soon after the operation, the other from phthisis, a few months later. One case (strumous) submitted to an amputation of the foot, and 12 underwent a secondary operation, all recovering with useful limbs. In 11 cases, between the ages of 4½ and 16, from one to two months elapsed to the time of recovery, and from the ages of 20 to 35 the time was extended from three to eighteen months, showing the prognosis to be particularly favorable in the case of children. Of the cases reported which have come under my observation since the date of Doctor Burrall's article, nearly all give most satisfactory results and undoubtedly establish the fact that primary amputation is rarely if ever advisable for disease of the os calcis.[h] Of partial excision,[i] gouging, or scraping of the bone, I shall not speak, except to state that experience teaches that when the disease is trifling or limited partial excision, gouging, or scraping should be practiced. In those cases where the disease seems to involve the deeper portions of the bone, or involve it extensively, and do not improve by local or constitutional treatment, or both, complete excision should be performed as early as practicable. The following case came under my care during my service at Evansville, Ind.: W. S., aged 37, born in Kentucky, was admitted to the "marine ward" of the City Hospital, Evansville, Ind., August 14, 1882, with caries of the os calcis, right foot, following an injury received two months before. At the time of his admission the following history was obtained: Had always enjoyed the best of health, never being sick or injured until April 30, 1878, when he received a sprain of the right ankle, for which he had hospital treatment, and was discharged recov-

f Wien, 1863 (Lehrbuch der Resectionen).

g Bellevue and Charity Hospital Reports, 1870; British and Foreign Medico-Chirurgical Review, July, 1853.

h Among this number are four from the annual reports Marine-Hospital Service. A successful case by Surgeon-General John B. Hamilton, in 1879, for compound comminuted fracture. Two by Surgeon E. Hebersmith, in 1875–'76, in which the bone was removed for necrosis, but the report does not state that it included the entire os calcis, recovered; and an unsuccessful case, which occurred during the service of Surgeon H. W. Sawtelle, at Saint Louis, in 1881. In this case I assisted Doctor Sawtelle in the operation, and had the patient been in any condition but the very worst, success would have undoubtedly rewarded our efforts.

i First performed by Formius for a gunshot wound in 1669.

ered May 27. An examination of the records of the station corroborated this statement, as did they also the following additional ones, elicited a few days after admission: Was admitted December 30, 1878; diagnosis, "caries of tarsal bones of right foot;" discharged as "recovered" January 26, 1879. Admitted February 12; diagnosis, "chronic bronchitis;" discharged, "recovered" March 13, and admitted September 15; diagnosis, "contusion of right ankle joint;" discharged "recovered" September 23. Admitted December 16; diagnosis, "caries of right tibia;" discharged "not improved," December 19, 1879. No record of the case appears again till that of August 14, 1882, previously referred to, when he was admitted with caries of the os calcis, complicated with acute synovitis of the ankle-joint. The patient was unable to bear his weight upon the foot, much less walk; the foot was badly swollen, and three sinuses just below the outer malleolus extended down to the os calcis, which, upon examination, was found to be badly diseased. The synovitis disappeared after a few days of rest, elevation, and local treatment, and then excision of the os calcis was determined upon. In order to be prepared to give the best support to the foot after the operation, a plaster-of-paris dressing was applied three days before to the foot and leg, leaving the heel bare, the foot being at a right angle to the leg.

This dressing was so arranged by the absence of plaster posteriorly that when it was cut in the median line anteriorly it could be opened without trouble, exposing the entire limb. I do not find on record any case where a preparatory splint of this kind has been made, but the application of plaster-of-paris dressing to the limb *after the operation* is reported. The bandage was removed the day before the operation, nicely padded, and supplied with lacings, making a most excellent splint, actually moulded to the limb, open upon the heel, thus allowing the discharges to escape and the dressings to be applied with ease. I performed the operation on August 24, 1882, assisted by Drs. J. H. Kerth and J. E. Gudgel, of the Evansville City Hospital staff. The patient being fully etherized, and an Esmarch bandage applied, an incision was made extending from the calcaneo-cuboid articulation backward around the heel to a point exactly opposite. This flap was then dissected from the bone and carried forward, exposing the under surface of the os calcis, which was found to be in an advanced state of caries. The tendo Achillis was then detached from its insertion, a short perpendicular incision being made for this purpose midway behind the heel.

The articulation was then opened, the interosseus ligaments divided, and the bone separated from its connections with the cuboid and removed. (It is not advisable to make any incision into the sole of the foot in performing this operation, as the cicatrix following is liable to become inflamed and ulcerated under pressure.) Great care was taken to carry the knife closely to the bone in order to avoid injuring any of the large blood vessels. Upon the removal of the Esmarch bandage the bleeding was very slight and easily controlled by the application of carbolized hot water. The three sinuses previously referred to were then cut

away and the wound thoroughly cleansed with a strong solution of carbolic acid. A small drainage tube was placed through the wound at its most anterior point, the flaps brought together and held by sutures, the limb placed in the splint previously described, and suspended from an apparatus over the patient's bed, carbolized oil dressing applied to the heel, a hypodermic of morphia sulphat. gm. 03 (½ gr.) administered, and the patient left in the care of the nurse. The dressing was not disturbed until the third day, when it was removed, and union by first intention was found to have taken place throughout nearly the whole line of the incision. The fever after the operation was very slight, reaching its maximum on the fourth day, and disappearing at the end of a week, at which time the drainage-tube was removed, the carbolized oil dressing discontinued, and freshly prepared carbolized oxide of zinc ointment substituted. This application was continued for nearly a month, at the and of which time, the wound being perfectly well, it also was discontinued, and for the first time the patient was allowed out of bed; rest, support, and elevation having been the chief factors in the treatment of the case. Gradually and with the greatest amount of care the patient was permitted to bear a little weight upon the foot, first with the aid of a pair of crutches, then with one crutch, and later with a cane, until about the end of December, 1882, when the cane was thrown away and only a padded shoe used. February 21, 1883, terminated the treatment of the case; the patient was discharged, walking from the hospital with barely a limp noticeable in his gait, and resumed his former duties as a "roustabout" upon the Ohio River.

One year after his discharge I had an opportunity of making a careful examination of the foot when on a visit to my office to be vaccinated. The foot was apparently as useful as ever, and had not troubled him since his discharge, though constantly upon his feet at work. A scar was present along the line of the incision; the foot was slightly curved upward and outward, the sole of the foot was flat, and the projection of the heel absent. Under the skin could be felt a strong fibrous callosity, as it were, to which seemed to be attached the tendo Achillis and the muscles supplying the anterior portion of the foot. The inner margin of the foot had lost its curvature. Under date of February 11, 1886, I was informed by Assistant Surgeon S. D. Brooks, then stationed at Evansville, Ind., that he had recently seen this case; "he was in good condition, walked well, and had no trouble with the foot." I do not believe that the injuries received or the conditions existing in this case prior to his last treatment in the hospital were in any way connected with or factors in producing the disease in question. The following essential points may be deduced from the article, viz, that the prognosis is more favorable the younger the case; the deformity after the operation is comparatively slight; the foot is nearly as useful as when in the normal state; that partial excision, gouging, or scraping may be practiced when the disease is trifling or limited superficially; and that primary amputation is rarely, if ever, advisable for disease of the os calcis.

TWO CASES OF HERNIOTOMY. RADICAL CURE.

WITH GENERAL REMARKS.

By Passed Assistant Surgeon R. P. M. Ames.

The two following cases of kelotomy, in both of which a radical cure was obtained, are deemed worthy of publication as affording good examples of the obstacles that may be met with in reducing a strangulated entero-epiplocele with old adhesions on the one hand, and the ease with which celotomia may be performed in an obscure case of strangulated enterocele on the other. The two cases present a most striking contrast throughout, and demonstrate the fact that the best results may be obtained in strangulated hernia of even an extremely complicated character, and that we should not allow the absence of local signs in suspicious cases to lead us into forming an erroneous diagnosis.

Case I.—Strangulated Scrotal Hernia—Entero-epiplocele—Herniotomy—Radical Cure.

John W.; aged 45; born in Kentucky; was admitted to the "marine ward" of the Evansville City Hospital, at Evansville, Ind., on July 4, 1884, suffering from a strangulated hernia, which he believed to be of forty-eight hours' duration. On admission the following history was elicited: "Have been ruptured on both sides for twenty years; have always worn a double truss till 2 years ago, when the one in use was broken, and have not had one on since." About two o'clock in the afternoon of July 2d he was engaged, with other men, unloading sacks of corn from a boat. While attempting to place a sack of corn upon his shoulder he was suddenly seized with a sharp pain in the right groin, followed immediately by a sense of weakness in the region, and slight increase in the size of the rupture. Nausea and vomiting soon set in and the man was removed to his cot in the stern of the boat, where he remained without any attention till the afternoon of July 4, when, the boat arriving at Evansville, he was transferred to the hospital under my charge. I was at once summoned by the interne, and upon a hasty examination I found the patient had a double hernia, both being oblique inguinal. The one upon the left side was small, easily reduced, and gave no trouble; the other was quite large, had descended into the scrotum, was exquisitely painful to the touch, and presented every indication of a recent strangulation of an old hernia.

These herniæ, as before stated, had existed for about twenty years, had never given him any trouble, and when reduced were easily held in place by a double truss. For two years, however, he had not worn a truss, and the right hernia had increased till the scrotum on that side was considerably distended and thickened. The condition of the patient being a serious one, he was more carefully examined, when the following additional points were noticed: Face, flushed; expression, that of anxiety; temperature, 39° C.; pulse, rapid, hard, and wiry; tongue, coated, dry; constant nausea; vomiting at times, but not of stercoraceous matter; absolute constipation; retention of urine; very restless; jactation; griping pains about the umbilicus; tympanites and slight tenesmus. The thigh was flexed upon the pelvis, thus reducing the tension over the tumor. In the right inguinal region and extending down into the scrotum was a large oval tumor being 0.305 metre (12 inches) in its greatest length, and 0.457 metre (18 inches) in circumference. It was soft and doughy to the touch in the lower two-thirds of the body, and could be handled without much pain; exceedingly firm and very sensative over the neck, and enveloping and obscuring the testis on that side. On squeezing the tumor the testicular sensation was found to be present. Hypogastrium tender and tumefied. The diagnosis of strangulated entero-epiplocele was made, and without attempting any expectant treatment, the patient being quite low and the weather extremely hot, 100° F. in the shade, ether was at once administered and reduction by taxis attempted. This was abandoned after fifteen minutes of gentle but firm manipulation and complete inversion.

The operation was then commenced (the parts being shaved and washed antiseptically) by making an incision through the skin and superficial fascia; extending from a point directly over the external abdominal ring downward over the body of the tumor for a distance of 0.152 metre (six inches); the various layers were then divided without regard to number till the sac was reached. On opening the sac about 150 centimetres (five ounces) of a dark turbid fluid escaped, exposing a large omental protrusion occupying the lower two-thirds of the tumor, while the upper portion was filled with several inches of the small intestines, dark purple in color, though still elastic, and apparently filled with fecal matter. Passing the finger upward along the surface of the bowel a strong fibrous band was detected encroaching upon the intestines just below the external abdominal ring, and evidently the seat of strangulation. This being divided the stricture was removed, the discoloration of the bowel lessened, and gradually its natural color returned, a few spots of ecchymosis remaining. Several old adhesions were then discovered about the lower portion of the tumor, the division of which required the temporary removal of the cord and testis from the tunica vaginalis. At this point in the operation the patient was seized with a fit of vomiting, during which, while lying upon his side, about 0.914 metre (three feet) of the intestine escaped through the

opening in the abdominal wall. It was at once washed in a warm solution of the bichloride of mercury, as well as that previously strangulated, and an attempt made to replace the gut piece by piece, but this proved unsuccessful, for as soon as a few inches had been returned they were shot out again. It being clear that some obstruction existed at or near the internal ring, the finger was passed along the inguinal canal, when the mouth of the sac was found to be occluded by the intestines, bound down by old and firm adhesions.

The patient was now very weak; hypodermics of whisky and ether were frequently given; the weakened and ecchymosed bowel would not allow of force in accomplishing its reduction, and longer exposure would have been hazardous in the extreme. An incision was therefore made .076 metre (3 inches) in length, extending from the external abdominal ring upward and slightly inward, the bleeding being checked, the peritoneal cavity was opened, the herniated gut returned, and the deep and superficial edges of the incision brought quickly together and held in place by sutures of carbolized cat-gut. I now turned my attention to the omentum, which, with the testicle, had been lying all this time outside the scrotum. The omentum having been affected by the constriction, it was securely ligated by a double catgut ligature at the external ring, and the entire mass below cut away. The stump was left in the inguinal canal and effectually closed the internal ring, being held in place by four deep sutures of catgut, connected with the ligature upon the omentum, and used in closing the deep portions of the wound. A small drainage-tube was then placed in the superficial portion of the wound, the testicle returned to the tunica vaginalis, and the original incision closely sutured. A purely antiseptic dressing was applied, and the patient put to bed, the operation having consumed three hours. Stimulation by hypodermic injections of whisky, ether, and atropia was kept up for four hours after the operation, when the patient having sufficiently rallied they were stopped, a small dose of morphia administered, and sleep allowed.

July 5.—Patient slept four hours during the night; is now quite comfortable; no fever; complains of pain in right cord and testicle; dressing not disturbed. Morph. sulph., .02 gm. (gr., ⅓). Quin. sulph., 30 gm. (gr. v) ter in die.

July 6.—Patient doing well; temperature, 38° C.; bowels acted spontaneously during the night; stool copious, unaccompanied by pain or blood, and affording great relief; treatment continued with light, nourishing food; dressing changed in the afternoon; parts looking well.

July 7.—Temperature, 38.2° C.; complains of general soreness in right groin; dressing changed and drainage-tube removed; second incision united by first intention, as also the lower portion of the first; wound at the opening closing by granulation; morph. sulph. stopped; quin. sulph. continued.

July 8.—Temperature 37.5° C.; patient doing nicely; eats and sleeps well.

July 9.—Temperature normal, 37° C.; and no fever occurred after this date.

July 10.—Dressing changed; wound nearly closed; quin. sulph. stopped.

July 16.—Antiseptic dressing changed for carbolized oxide of zinc ointment.

July 20.—Patient allowed out of bed for a little exercise at short intervals, the wound having entirely healed; ointment continued as being soothing to the parts.

August 1.—Patient now moving freely about; ointment stopped, and a soft pad held in position by bandages placed over the cicatrix.

August 14.—Patient this day discharged, with the understanding that he would return in a month to have the small hernia on the left side operated upon. I did not see him again till November 31, when he came to my office for treatment for a slight wound of the hand. An examination of the right groin showed a radical cure of the hernia on that side. A firm fibrous-like cicatrix was present over the external abdominal ring, and no amount of coughing or muscular exertion on the part of the patient would give the slightest impulse to my hand when placed over it. He was again urged to have the left hernia operated upon, but replied that he was "too busy." I have recently heard a favorable report from this case. "There has never been any return of the hernia on the right side, and I constantly wear a truss upon the left."

CASE II.—STRANGULATED BUBONOCELE.

HERNIOTOMY—RADICAL CURE.

William S., aged 18, born in Tennessee, was admitted to the "marine ward" of the Evansville City Hospital, Evansville, Ind., on November 6, 1884, suffering from an attack of acute traumatic orchitis, occasioned by falling from a pile of lumber the day before. It seems he was standing on the top of the pile when suddenly it toppled over, carrying him to the ground, a distance of 15 feet, where he fell against a projecting piece of joist, striking him in the right groin. With the exception of a brief faint, no injurious effects appeared to follow the accident until the next day, when the testicle commenced to swell and soon became very painful. In this condition he was admitted to the hospital, the parts elevated, and cold lead water and laudanum applied. The day after admission the orchitis was much better, but strange to say the thermometer showed a temperature of 40 degrees C. (104 F.), entirely out of all proportion with the local trouble. Some internal injury or strangulation of the bowel was now suspected, but a careful examination failed to give anything but a negative result. The patient was placed on decided doses of quinine, an anodyne administered, and the results closely watched.

November 8.—Patient much worse; temperature 41° C. The anodyne had been ejected soon after being taken, and vomiting at irregular inter-

vals continued thereafter, but never stercoraceous in character. Pulse compressible, small, collapsed; tongue coated, tremulous; bowels constipated; vomiting gave a sharp, darting pain in vicinity of internal abdominal ring; slight tympanites; hippocratic countenance. All these conditions, with the previous history, now led me to believe that strangulation, or some obstruction to the bowel, had taken place near the seat of the injury, though all local signs to this end were absent. I at once determined upon opening up the inguinal canal, there being no time for expectant treatment, and in the event of failing to find therein the seat of the obstruction, to open the peritoneal cavity and examine the intestines *in situ*. Accordingly the patient was etherized, an incision, 0.037 metre, one and one-half inches long, was made over the external abdominal ring, and the tissues divided down to the opening. When the finger was introduced into the canal the mystery was at once solved, for there, fitting as tightly as a cork in a bottle, was a knuckle of intestine, firmly held in its abnormal position by the fascia surrounding the internal ring. The gut was gently secured by a pair of padded forceps, and held by an assistant till the constriction was divided, then slowly withdrawn, the sac opened, and the bowel examined. For a distance of about 0.025 metre (one inch) the gut was engorged, congested, and approaching a purplish hue in color. There being no indications, however, of gangrene or perforation, the gut was washed with a warm solution of the bichloride of mercury and returned to the abdominal cavity. In order to make an attempt at a radical cure, I now enlarged the opening exposing the internal ring. Three double carbolized catgut sutures were then passed through the deeper portions of the wound, including the edges of the peritoneum at the ring. These edges being carefully drawn up into the canal, the sutures were firmly tied and the opening closed. A small drainage-tube was then placed in position, the superficial portion of the wound sutured, and antiseptic dressing applied. The operation consumed thirty-five minutes. The patient rallied well. Three hours after the operation he had a copious discharge from the bowels, when morph. sulph. .03 gm. (gr. ½) being administered hypodermatically, he fell asleep and passed a very comfortable night.

November 9.—Case doing very well; temperature, 39° C.; no pain; dressing not disturbed. Morph. sulph. .02 gm. (gr. ⅓); quin. sulph. 30 gm. (gr. v) ter in die.

November 11.—Dressing changed; deep parts of wounds united by first intention; drainage-tube removed; temperature, 37.8° C.

November 16.—Wound completely closed; antiseptic dressing changed for the carbolized oxide of zinc ointment.

November 28.—Patient allowed out of bed, wearing a soft pad over cicatrix held in place by a large truss.

December 29.—Patient this day discharged, with instructions to wear the pad and truss for a month, then do without them. At the end of this time he returned to report, when the result was pronounced a radical cure, the same conditions being present as were mentioned in the

preceding case, *i. e.*, firm cicatrix over the line of incision, and no impulse transmitted to the hand on coughing or by muscular exertion. A year later the patient was again examined, and the parts found in the same condition.

Here, then, are two cases of strangulated hernia, we might say, rescued from death; the herniated viscus returned into the abdominal cavity without injury, the weakened and enlarged ventral opening in the wall of the abdomen permanently closed. When we look back among the records of kelotomy we find it was more fatal than it is now. In fifteen cases mentioned by South in a note on Chelius' Surgery, nine recovered and six died, and Mr. Hey states that he "lost three patients in five upon whom the operation was performed."[a] There can be no doubt that the cause for the mortality has been, in the majority of cases, due to septic peritonitis after the operation, and to the delay in performing it. Of this I shall speak later. During my connection with the Philadelphia Hospital I had occasion to study many cases of this kind, and the records of that institution, as well as all other large hospitals, particularly in the old pre-Listerian days, bear me out in saying that of the deaths occurring after an operation for strangulated hernia, 75 per cent. are due to septic peritonitis or its concomitant. To avoid these dangers, and to be able to obtain the best results, the most careful attention must be given to the hygienic surroundings of the patient, to an antiseptic method of operating, and to the uninterrupted use of the best known antiseptic dressings.

Upon these points I shall not dwell, and will pass to a brief consideration of the time when herniotomy should be performed.

It is a good general rule of practice to operate early in cases of strangulated enterocele that are small and of recent origin. Operate early; don't postpone the operation until death is inevitable, for lives are too often sacrificed by the hesitancy which many surgeons feel in resorting to herniotomy. When we remember that gangrene may occur in acute cases in a very few hours,[b] the dangers consequent upon delaying an operation of this kind are all the more apparent. I sincerely believe that had the liberation of the bowel in the preceding cases been longer delayed, particularly in Case II, for the occurrence of local signs, an artificial anus, if not death, would have been the result. Birkett estimates the proportion of patients lost by delay as being two-thirds of those who die after the operation, and judiciously advises that no case of strangulated hernia should be left until the constriction has in one way or another been relieved. He also regards the exploratory incision (Case II), when the diagnosis is not clear, as highly proper. We should not become unmindful of the fact that the rule of "when in doubt operate" is founded upon sound surgical principles. No words were ever more truthfully uttered than those of Birkett when he said, "The vital importance of liberating the bowel from constriction at the earliest moment cannot be overestimated, as upon the speedy accomplishment of this the salvation of life depends; a little precipitate action may even

a When Mr. Hey entered upon the practice of surgery, more than one hundred years since, "the operation for the strangulated hernia had not been performed by any of the surgeons in Leeds."

b Sir Astley Cooper reports a case in which death occurred in eight hours from the commencement of the attack.

be forgiven, so hazardous is the position of a patient with the bowel strangulated.

But what is the risk attending the operation of exposing the hernial sac, dividing the impediment to the reduction of the hernia, and reducing it, even should the peritoneal sac require to be opened? Practically none. In comparison with that of leaving the bowel strangulated, it is harmless. Let us then bear in mind that the operation for strangulated hernia must be performed early, and immediately when a brief resort to taxis has failed to reduce it. I say brief resort to taxis, for by taxis more irreparable damage may be inflicted on the bowel in a few moments by coarse, careless, and impetuous manipulation than the natural means of constriction could produce in several days. The treatment of the omentum when present is of great importance in avoiding septic inflammation after the operation. It is a nice question to decide when an omental protrusion or epiplocele should be returned and when it should be removed. I would say that when the bulk of the omentum is small and it has not been injured by the constriction, it might be returned; but by far the safest method and the one that gives the best result is to ligate it. Cut it off; do not leave it—do not dread it in any quantity; securely ligate it with a double cat-gut ligature; cut it away, and leave the stump in the canal to block up the ventral aperture. To leave the omentum in the sac means profuse suppuration, and profuse suppuration surely means septic inflammation of the peritoneum. I do not know of a single instance where the removal of the omentum has given rise to an untoward symptom; while on the other hand it has hastened the period to cicatrization of the wound. To accomplish a radical cure, great care must be taken to secure the obliteration of the hernial sac, the closure of its ventral orifice, and the strengthening of any weak place in the walls of the canal through which a rupture may pass. When the hernia contains omentum this result can be obtained almost invariably by leaving the stump after ligation in the canal, the ligature around it being provided with loops through which the deep sutures, used in closing the wound, are passed, thus securely holding it in place until the structures are firmly united through inflammatory action (Case I).[a] In those cases where omentum does not enter into the formation of the hernia, the deep portions of the wound should first be brought together, care being taken to have the edges of the peritoneum drawn well up into the canal and firmly sutured (Case II). Unless this precaution is taken, the posterior wall of the canal and ring being included in the operation, it will fail, for the ventral orifice will remain open, allowing the hernia to redescend behind the seat of the operation.

A brief résumé of a few of the salient points mentioned in the preceding cases is deemed of interest. Let us review them interrogatively.

When and how did strangulation take place? Case I, undoubtedly at the time when the patient was in the act of placing the sack of corn upon his shoulder, and by the protrusion of an additional portion of the intestine filled with fecal matter into an already existing but reducible hernia. Case. II, at the moment when he struck upon the joist. The internal abdominal ring was momentarily stretched, if you will—there were no indications of any laceration of the tissues—by the force of the blow; the bowel under the pressure of a descended diaphragm and forced inspiration protruded, and instantly was caught in its abnormal position by the contracting fibers of the tissues surrounding the internal ring.

[a] Three years ago I successfully performed this operation upon a lady seventy years of age, the entire wound uniting by first intention—direct inguinal epiplocele.

How long had the bowel been strangulated when relieved?

Case I. Fifty hours.

Case II. Eighty hours.

What unusual conditions were noticed?

Case I. Adhesion.

The impediment to the reduction of the hernia produced by the adhesions in this case was quite remarkable. The internal ring was nearly surrounded by intestine firmly adherent to the wall of the abdomen, and so situated that it most effectually prevented the return of the intestine when it had once escaped.[a] The firm adhesions in the lower portion of the hernia were also rare; but they are occasionally met with. Kapteyn reports a case in the London Medical Record of December 2, 1874, in which the adhesions took the form of a ring a round the lower portion of a scrotal hernia and became eventually the seat of the strangulation.

RETENTION OF URINE.

Retention of urine is rarely met with in strangulation of the bowel, particularly before the operation; it occasionally occurs afterward.

DISPLACEMENT OF THE TESTICLE AND CORD.

Rarely in an operation for hernia is it necessary to remove the testicle from the tunica vaginalis. In this case the division of the adhesions required it. It is also of value to note the amount of exposure that the cord and testis can receive without subsequent inflammation.

CASE II. ABSENCE OF LOCAL SIGNS.

In this case there was nothing to indicate the presence of a hernia except the constitutional symptoms. No tumor was present, and a careful examination of the inguinal region failed to give any evidence of the slightest protrusion. The sharp darting pain in the vicinity of the internal ring on vomiting may be considered of diagnostic value when taken in connection with the constitutional symptoms.

HIGH TEMPERATURE.

The temperature was abnormally high, being 41° C. when the operation was performed, and dropping to 39° C. the morning after. It is not believed that any malarial poisoning existed in this case, as there was nothing to indicate it. A decided drop in the temperature after the operation is also noted in Case I.

Why was taxis attempted in Case I and not in Case II?

Case I the hernia was large; it had many times before been reduced by the patient himself, and in an old previously reducible hernia, now strangulated, the danger of injuring the bowel by taxis is much less than in acute cases.

Case II was a most urgent one. It was an acute case; strangulation had existed at least forty-eight hours when it was suspected. There being no tumor, any manipulation around the inguinal region for the purpose of trying to reduce a supposed strangulation was deemed unwise, for did it exist, and the constriction firm, the bowel could easily have been ruptured, the knuckle of intestine strangulated being small and early softened in consequence of the strangulation. In both these cases the dressings consisted of patent lint freshly prepared by being saturated with a 1 to 2,000 solution of the bichloride of mercury and covered with a layer of iodoform.

[a] I do not find on record any case where a similar difficulty has been met with.

FRACTURE OF LEG, BOTH BONES—DISLOCATION OF TARSUS AND GANGRENE.

By Passed Assistant Surgeon A. H. Glennan.

Seaman Samuel Patterson, aged 27, nativity Mississippi, coal passer upon steamer Amite, left his vessel at Cedar Keys, Fla., in July, 1885, in order to be treated for dysentery. Failing to obtain relief that evening, he became soaked with rain, and, probably being intoxicated, crawled under a freight car for shelter. Some time in the early morning the train started up, causing a fracture of his left leg, dislocation of bones of foot, and a contusion of right ankle. After lying upon the track for some hours, he was removed to the temporary hospital at that place, and about a month later was transferred to the United States Marine Hospital at Key West, Fla.

Upon admission from the mail boat, on the evening of August 22, the patient appeared greatly emaciated, extremely weak, with sub-normal temperature, and diarrhœa. The fractured leg did not appear to have been set; was gangrenous to the knee; filled with maggots, and the odor extremely offensive. Large sloughs had formed about the ankle, which he said had occurred after removal of splints a few days subsequent to injury. Gave a history of treatment a year previous in New Orleans, La., for syphilitic rheumatism, where he contracted the morphia habit. Had been a steady drinker. The limb was at once thoroughly cleansed, rendered aseptic, the patient stimulated and made as comfortable as possible.

Upon consultation the following morning opinion differed as to the advisability of amputation; death seemed inevitable, and from his low vitality it was doubtful whether he would survive the operation. I decided to give him the chance, and placed the matter plainly before him. After some hesitation he consented upon the morning of the 24th.

Ordered pil. atropiæ sulphatis, 0.001 gm., and brandy, 50 C. C.; one-half hour later, morphiæ sulphatis, 0.016 gm., hypodermically. After administration of chloroform I amputated at lower third of thigh by circular method; bismuth irrigation, antiseptic gauze, and absorbent cotton dressings. Patient rallied slowly; stimulants, warm milk, beef tea, &c., given freely and systematically day and night; morphia as required. August 25 and 26, temperature normal, pulse 120 and weak, skin cool, with profuse perspiration; tonic and stimulating treatment continued. August 27, A. M. temperature 37⅕° C., pulse 120; stump

dressed; appeared pale, with little, if any, inflammatory action. Three P. M. a "norther" came on suddenly; found patient in a cold, clammy sweat; temperature 36° C., pulse feeble. Ordered atropia sulph., 0.001 gm., warm milk and brandy every half hour, until some reaction took place. Under the influence of the atropia the skin became dry and warm, pulse stronger, and temperature elevated to normal. For the next few days this condition recurred, generally in the afternoon, and again about 2 o'clock A. M.; treatment continued as before, with digitalis, sponging with dilute alcohol and quinine, &c. Atropia discontinued August 30. After this time his temperature ranged from 37$\frac{1}{5}$° C. in the morning to 38$\frac{4}{5}$° C. in the evening for several weeks. During this period an abscess formed in the cervical region; was opened and 30 cubic centimetres of healthy pus evacuated. Later a syphilitic ulcer appeared upon right ankle, where the original contusion occurred; this, with attacks of rheumatism, yielded under appropriate treatment. Diarrhœa recurred at intervals, but was promptly checked. Discharged October 29, recovered.

Dissection of removed limb, showed tibia bowed, with some provisional callus thrown out; no attempt at union of fibula.

The points of interest in this case are:

1st. The opinion (prevalent to some extent) that amputation was contra-indicated; that the stump would not heal, on account of the unfavorable history of syphilis, joined in this case with the alcohol and morphia habits—when it might have been done nearer to the seat of injury in the first instance, before reducing the patient's chances of recovery to a minimum.

2d. The favorable action of medicinal doses of atropia in conditions of collapse, where other stimulants failed. With a subnormal temperature, weak pulse, cold clammy skin, &c., it elevated the temperature, increased arterial tension, the skin became warm and dry, and this condition repeatedly recurred in the course of from nine to twelve hours for several days, as the effects of the drug wore off and had to be renewed. This favorable effect was probably due to stimulation of the accelerator nerves, and of the vaso-motor centres, causing contraction of the arterioles. Bartholow speaks of its successful use in collapse of cholera, while H. C. Wood says, "As a stimulant to the circulation belladonna has probably not been employed as much as it ought." Certainly its derivative proved effective in this instance.

ABSCESS OF LUNG.

By Passed Assistant Surgeon A. H. Glennan.[a]

Seaman C. H. Jackson, U. S. S. "Powhatan," at sea.

February 21, 1886.—He suffers from pain in right iliac region, and near epigastrium, with tenderness on pressure, which he says has existed two days. Retains nothing in stomach; slept none last night.

February 22.—Pain and tenderness confined to region of right kidney and ureter. Loin very sore; no fever.

February 23.—Less pain.

February 24.—Pain diminishing.

February 25.—A tumor is found to exist in region of right kidney. The part is less tender and his general appearance is better.

February 26.—No change.

March 1.—To duty.

March 3.—He has an obscure tumor in right iliac region, which commenced with pains and vomiting about February 19. He attempted duty two days ago, but now suffers from general malaise, with tenderness upon pressure over tumor. Temperature, 37.2° C.; pulse, 86 A. M.; temperature, 38.2° C.; pulse, 88 P. M.

March 4.—Thinks something "broke inside of him" to-day. Iliac tumor has disappeared. He passed fetid fæcal matter soon after. A. M. temperature, 37.1° C.; pulse, 85; P. M. temperature 38.2° C.; pulse, 98.

March 5.—Expectorated blood and pus. They seem to have come from an abscess. Less iliac trouble. Temperature, A. M., 38°; pulse, 85; P. M., 38°; pulse, 88.

March 7.—Was comfortable during day, but about 9 P. M. expectorated reddish muco-purulent matter.

March 8.—Cough and expectoration continues. A. M. temperature 37.2°; P. M., 37.3°.

March 9.—States that he has had two attacks of hæmoptysis previous to present trouble; no better to-day.

March 11.—Board of survey held. The bloody and purulent sputa are offensive, and seem to come from an abscess in lower lobe of right lung, or from an abscess that discharges through the right lung. His general condition is worse, but he is not confined to bed. There is still some tenderness in right iliac region.

[a] Clinical history to time of admission, furnished by Dr. F. J. B. Cordeiro, U. S. N.

March 12.—Cough very troublesome. Expectoration fetid.

March 12–15.—Continues the same; he is losing flesh.

March 16–19.—Night sweats; temperature normal.

March 22.—Less cough; bloody sputum.

Admitted to United States Marine Hospital, Key West, Fla., 2 P. M. of March 25. Condition as above stated. Temperature 37.4° C. Left sterno-clavicular articulation prominent and inflamed, metastatic in character, odor of breath sweetish and offensive, moist rales abundant at base of right lung. Area of liver enlarged, and tender to pressure. ℞: Tonic and stimulating treatment, milk punches, digitalis, and quinia. Iodine paint over liver.

March 29.—Temperature, 37.8° C.; antiseptic inhalations, 5 to 10 minutes four times a day.

March 30.—Temperature, 38.4°. ℞: Pulv. digitalis, 0.66 gm.; quinia sulphatis, 1.33; pulv. ipecac, pulv. opii aa 0.33 gm.; ext. gentian, 9.5; M. ft. in pil. xx. Sig.: One pill three times a day until temperature is reduced to normal. Sirup hypophosphites, 8 C. C., three times a day.

April 4.—States that he had a large number of evacuations during the night, muco-purulent and bloody; also, coughed up considerable offensive bloody matter; controlled with ergot and pil. opii camph. 6 P. M., temperature 38°. Quinia and digitalis renewed.

April 5.—Temperature, 37.8° C.; pulse, 85. Heim's antipyretic pills recommenced; inhalations and supporting treatment continued. From this time a general improvement took place, appetite good, increase of weight, with gradually diminished expectoration; temperature normal. Returned to duty upon his vessel April 22, 1886, in a very fair condition. The early symptoms, prior to admission, will be seen to have been obscure, but appear to have involved the appendix vermiformis, and afterwards metastasis occurred, accompanying a mild form of pyæmia.

CASE OF PYO-NEPHROSIS.

NEPHROTOMY WITH SUBSEQUENT NEPHRECTOMY—RECOVERY.

By Passed Assistant Surgeon Eugene Wasdin.

Charles B., aged 35, native of Finland, was admitted to the marine department of Saint Mary's Hospital, Galveston, Tex., on July 14, 1885, suffering from acute rheumatism. This was evidenced by great febrile excitement, swelling and pain in the joints, especially the wrists, with marked acidity of the urine. Appropriate measures soon reduced the acute symptoms, but there remained in the left articulation a condition of chronic inflammation. Extension, with compression, hot applications, and shampooing, gradually restored the utility of the joint. He was discharged on October 8 by request. During the week preceding his discharge he called attention to a frequency of micturition, with some scalding, and also some pain in his back. Urethra and bladder were explored and found sensitive to the sound touch. Urine, examined in bulk, presented a cloudy layer at bottom of vessel. Marked acidity. Deposit from urine composed of mucus with a few pus cells. No enlargement or tenderness about the prostate. These symptoms subsided somewhat, under treatment, and he was discharged as stated.

During the winter of 1885 and 1886 he came under observation several times, and on each occasion the urinary deposit was found largely increased and assuming the appearance of pure pus. He complained of constant, dull pain in back and loins, and at hard labor, involving stooping, he speedily became incapacitated. In answer to leading questions he gave a history of injury to his back, in the region of his kidneys, on two occasions. The first was due to a "jam" between some portions of mining machinery in the State of New York in December, 1883, from which he suffered for some time, without, however, any very marked trouble with his urine. The second injury was of a different character, and occurred in Chicago during the summer of 1884, while straining at a heavy weight. Immediately after the attempt he felt great pain in the back and loins, radiating into the thighs, and on voiding urine he found it very bloody. The hæmorrhage and pain ceased under ergot, and he felt no more inconvenience until attacked with rheumatism. Examination of the back gave no evidence of disease of the bones. Urine remained very acid, with traces of albumen when filtered, and at times

gave evidence of rather free hæmorrhage all winter. About the end of January the pus deposit amounted to one-fifth of the urine voided, and contained small blood-clots. Much pain and great emaciation. Re- admitted to hospital February 4, 1836. Diagnosis, after a careful résumé of symptoms, "pyonephrosis." From the location of greatest pain over the left organ, together with a slight increase in its area of dullness, it was determined that this (left) was the principal, if not the only, one involved. There was no bulging of the loin or abdominal walls, as with a tumor; in fact, the increased dullness of the percussion note extended only a very short distance below the normal area, and was scarcely perceptible to the gentlemen assisting in the operation.

Patient, being cognizant of the dangers of the operation, was thoroughly prepared, by a copious bath and antiseptic solution, for the table, on the morning of March 10. A careful physical examination the day before gave no evidence of disease other than the renal, and from the careful preparatory treatment there appeared an improved general condition. Still there was even a more markedly cachectic appearance; and the urine, for twenty-four hours, gave pus deposit of one-fourth its volume.

At 10.30, under chloroform, the left kidney was readily exposed by the lumbar incision as modified by Lucas, and was seen responding to the movements of respiration. It extended but 2 centimetres below the border of the last rib, and was quite tense to the touch; capsule adherent. Pus was easily discovered with an aspirating needle, and the abscess opened by an incision about $2\frac{1}{2}$ centimetres long, extending from the lower external border upwards and inwards, on posterior surface, towards the pelvis. This evacuated 150 grammes of unhealthy pus. The finger passed in the abscess cavity, which was about the size of a walnut, penetrated the thin wall of another, continuous with the first by a small opening, and then entered the pelvis. No foreign substance found. The entire wound was freely irrigated with bichloride solution—1 to 4,000—a double drainage-tube introduced into the cavities, and left depending from the lower angle of incision, which was closed with deep sutures. Antiseptic dressing applied and patient put to bed. Very little shock. Wound redressed on fourth day. Line of incision healed to lower angle. Pus drained freely, saturating large pads of oakum into which the tube emptied. From this time he lost flesh rapidly, although under the best dietetic treatment possible. Emaciation was extreme, and pus formations so copious that at the end of third week it was decided to remove the kidney. At no time did the temperature reach higher than 38.3° C., pulse 100; but ranged between 37.2° C. and 38.3° C.; evening exacerbation. Slight hectic gave warning of pyæmia. Urine in bulk slightly bloody, with a deposit of muco-pus about $\frac{1}{5}\frac{1}{0}$ by volume. On April 15, under chloroform, the loin was reopened in the line of old incision, slightly enlarged. The kidney was easily drawn into the incision, but, from extensive adhesions about the pelvis, not so easily delivered. Pelvis freed partially with the finger, and organ then drawn to the surface.

An ordinary pile clamp was applied deeply to the pelvic structures, which seemed to crush in its jaws. Copious hæmorrhage at once occurred. Kidney freed by a few clips of scissors. Pile clamp removed, and the bleeding vessels grasped with the fingers and pinched until hæmorrhage stopped. Clamp reapplied, and ligature passed around the vessels and ureter. Wound carefully irrigated, and from fear of hæmorrhage, a few aseptic sponges packed in it. Antiseptic dressing, with drainage-tube, applied. Temperature before operation was 37.7 C.; pulse, 86. At 9 P. M. it registered 37° C.; pulse, 96. Shock from such copious hæmorrhage was severe and lasted several hours, but at 9 P. M. he rested quietly, with temperature as above stated. Pancreatized milk, with quinine and opium, given during day and night. On the 16th dressings with sponges removed; no bleeding. Wound irrigated and redressed. Temperature 37.2° C.; pulse, 100. At 6 P. M. temperature 38.2° C.; pulse, 98. Daily dressings with quinine and opium, and later quinine and iron, together with special diet, were continued from this time.

On the sixteenth day after operation the ligatures, on gentle traction, came away. A small slough was entangled in the loop, and withdrawn. Deep in the wound the ureter was seen with pus flowing in some quantity from its orifice. Evidently the ligature had not induced adhesion with occlusion; and this was due, no doubt, to the suppurating condition. Convalescence slow, but uninterrupted. Temperature at no time above 38.8° C., and this rise was the result of inattention to the bowel during the third week. From a mere skeleton he has attained a weight not enjoyed before for many months. Urine still contains a few pus cells, from the ureter, and some bladder mucus; is normal in quantity, 1,500 CC., and either neutral or slightly acid; with a sp. gr. 1.018 to 2.020; no casts. When filtered and boiled, with the addition of nitric acid, a slight deposit of albumen is found, due to the increased tension of the right renal circulation. This is steadily improving. There is now (June 30) only a very small portion of incision unhealed. All functions are normal, and the indications are favorable to a perfect recovery. The history of this case, and the absence of any gonorrhœal or syphilitic trouble, indicates a traumatic origin of the lesion, doubtless the severe crush sustained several years ago. The organ when removed was only a little larger than normal, measuring 15 centimetres in length whilst suspended, and 4 centimetres in width. It weighed only 240 grammes. On the external border, passing inwards on the posterior surface, was the line of first incision still draining two large abscesses. Throughout the substance were found four other abscesses, the upper portion being only a distended pus sac. Some fat about the pelvis. Neither medulla nor cortex was distinguishable. From the unopened abscesses about 150 cubic centimetres of filthy pus was drained. After soaking in alcohol much of the capsule peeled off.

Since the foregoing report was written the patient has been discharged from the hospital, recovered.

COMPOUND FRACTURE OF LOWER JAW.

DELAYED UNION—OPERATION—RECOVERY.

By Assistant Surgeon R. B. Watkins.

C. B., colored, aged 23; nativity, Alabama; was admitted into the United States Marine Hospital at New Orleans, La., June 10, 1885.

History.—On the 9th of June was struck on lower jaw and knocked down by a large stone thrown at him. On arising found a large cut on lower lip and experienced great pain in attempting to use the lower jaw.

On admission to the hospital the wound was found to extend quite through the lower lip to the bone; was over an inch in length, with contused and ragged edges; distinct crepitus on movement of the jaw, near the symphisis, could be easily obtained, accompanied with much pain. After removing the right central lower incisor, which was loose, the wound was sewed up, dressed antiseptically, and the jaw firmly bandaged to the upper one. As soon as the wound had healed a stiff pasteboard splint was applied and kept in position for six weeks, when it was removed and the patient directed to use the jaw carefully; but disregarding instructions he began to use it vigorously at once, and succeeded in a few days in breaking up what union had taken place. An abscess now appeared just under the jaw, which was opened, and evacuated. A fistula, however, remained, which continued to discharge pus.

August 16 an endeavor was made to excite an inflammatory action by introducing a chisel between the broken ends of the bone, freshening their surface, after which they were brought together and held in place by silver wire around the teeth and a splint applied to under side of jaw. Although kept in apposition four weeks, no union resulted. Being now thoroughly convinced that the delayed union was caused by dead bone, probably a piece splintered off from the inner surface, an operation was performed October 25 for its removal. After etherizing the patient, a vertical incision was made through the lower lip and chin, a little to the right of the median line, as far as the mouth of the fistula under the body of the bone. After removing the tissues a short distance each side of the fracture the broken ends were pulled apart, and two pieces of dead bone were found and removed from the inner side. The ends of the bone were then sawed off, a hole drilled in each, and a doubled piece of silver wire passed through and twisted on the outer side, bringing the freshened surfaces snugly together. The incision was

closed by hare-lip pins and silk sutures, dressed antiseptically, and the jaw bandaged to the upper one. The hare-lip pins were removed on the 27th, and in less than ten days the wound was entirely healed. The jaw was kept at rest six weeks, when the bandages were removed, and the bone found to be strongly united. As the wire caused no discomfort, it was allowed to remain. The patient was discharged; recovered, January 7, 1886. Was seen February 1, 1886, when he stated that the jaw was as strong and useful to him as before its fracture.

REPORTS OF FATAL CASES, WITH AUTOPSIES.

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REPORTS OF FATAL CASES, WITH AUTOPSIES.

[NOTE.—The names of complications occurring in the progress of a case are inserted under the case number.]

CEREBRO-SPINAL FEVER.

Pleurisy.

H. D., aged 21 years; nativity, Pennsylvania; admitted to marine ward, Mercy Hospital, Pittsburgh, Pa., May 24, 1886; died June 8.

He had diarrhœa continuously for four weeks previous to his admission, with occasional headache and pain in the back. He had no appetite and was somewhat debilitated. A few hours after entering the hospital he was seized with severe, paroxysmal, lancinating pains in the spine (lumbo dorsal region), these occasionally extending down the lower extremities and around the trunk. These pains caused involuntary contractions of the muscles of the back and lower extremities. On the day after admission, May 25, the pains were less intense at times. There was marked hyperæsthesia over the abdomen, trembling of limbs, headache and delirium, the latter not constant. The diarrhœa was excessive; eructations of gas almost continuous; nausea; eyes suffused; the breath had a musty odor.

May 26.—The nervous symptoms continue, also diarrhœa; an eruption appears on the face; dark red patches joined together.

May 27.—The general symptoms much the same. The eruption has extended to trunk and limbs, but is less marked than on the face, consisting of roseolous patches the size of a pin-head, separated by patches of healthy skin.

May 28.—Eruption fading from face and neck; eyes less suffused; other symptoms continue.

May 30.—Respiration irregular and rapid; cough; bronchial breathing; delirium and trembling more marked; the eruption has almost disappeared.

May 31.—Less delirium; urine and fæces passed involuntarily.

June 2, 3, 4, and 5.—Cough troublesome; little delirium; respiration rapid and irregular. A chill occurred on the latter date.

June 6.—Sharp pleuritic pain right side; friction rales.

Autopsy.—There was great engorgement of the vessels of the meninges of brain and spinal cord, the pia mater being especially affected. Thick granular deposits were found on the visceral layer of the arachnoid over the convolutions of the superior longitudinal sinus. The arachnoid space of the cord contained a small quantity of transparent gelatinous material with some cerebro-spinal fluid.

The right pleural cavity contained about 500 centimetres of sero-purulent fluid, the surface of the lung being covered with a thick purulent exudation. This lung was slightly engorged with blood at the apex and in several small spots at its base.

The spleen was dark-red and softened. The intestines contained about a dozen ulcers, occupying the jejunum and ileum. There was, however, no regular thickening of Peyer's patches as in typhoid fever.

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ENTERIC FEVER.

Case 1.

M. J., aged 24; nativity, Maryland (negro); admitted to Marine Hospital, Saint Louis, Mo., February 19, 1886; died March 6.

History.—Taken sick about a week before admission with cough and fever. When admitted his symptoms were those of acute bronchitis (right side), with considerable depression of the nervous system. In a day or two the mind became more clouded, and a low delirium soon appeared, alternating with periods of semi-consciousness. The tongue was brown, with red edges and tip, and very dry; the teeth were covered with sordes, and the patient grew so very weak that expectoration was almost impossible. The bowels, at first constipated, became loose toward the end. Tympanites interfered very much with respiration. The body was covered with sudamina shortly before death.

Autopsy (eight hours post mortem).—Body fairly nourished; *rigor mortis.* Lung, right apex so firmly adherent to the thoracic pleura that it was torn in removing. This lung was also bound to the pericardium and diaphragm by recent adhesions. The entire lung, except a small strip at base, was in a state of red hepatization, sinking in water. Left lung congested hypostatically.

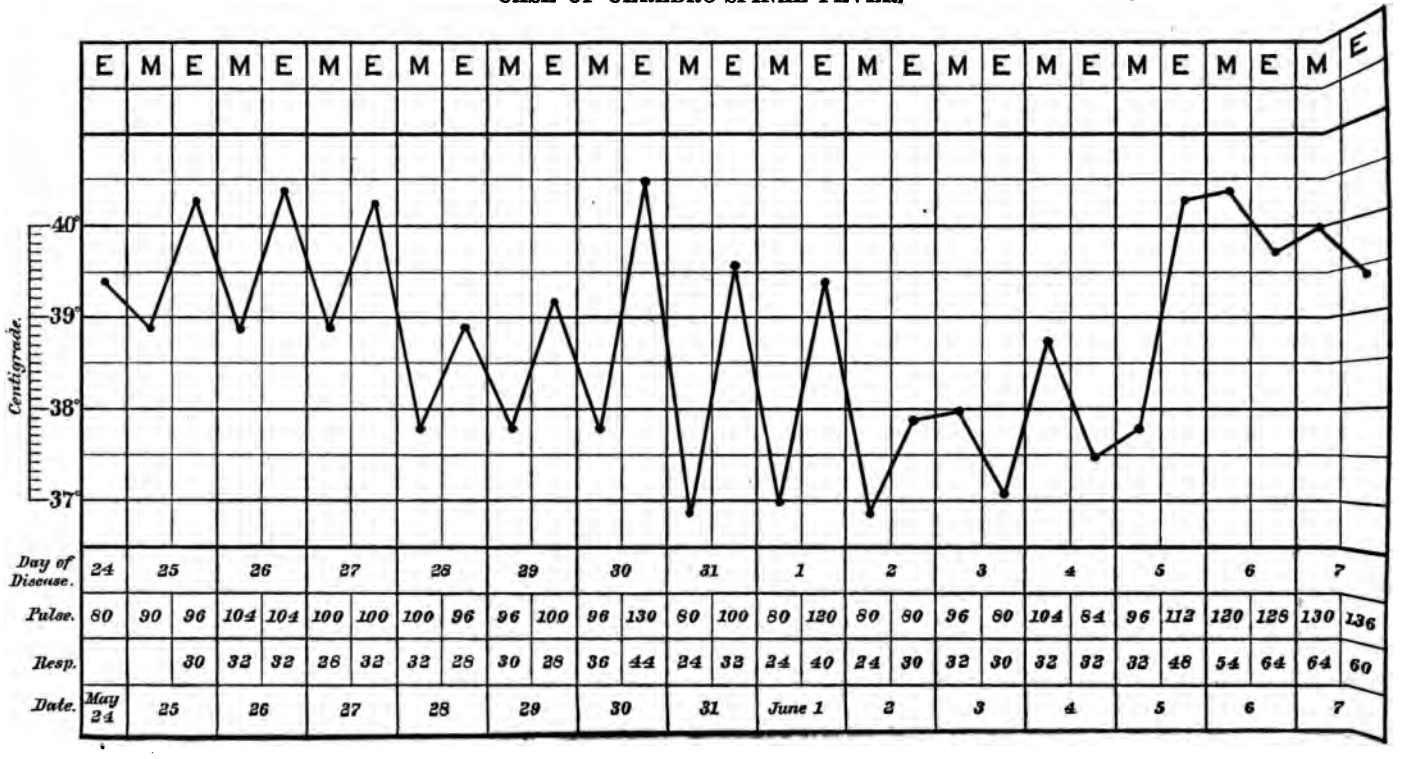
Small intestines considerably inflated with gas (as was the stomach also). Circumscribed spots of inflammation, with abrasion of the mucous membrane, in some cases from .5 centimetre to 3.5 centimetres in diameter, were found at irregular intervals throughout the small intestine, but were more abundant in the lower portion of the ileum. Large intestine, cæcum much reddened and inflamed, and a few spots of inflammation found in the colon.

Case 2.

G. W., aged 24 years; nativity, New York; admitted to marine ward, Mercy Hospital, Pittsburgh, Pa., April 21, 1886; died May 3. He was taken ill with chilly sensations and fever one week before his admission to hospital. These symptoms were followed by diarrhœa, the dejections of a yellow color. He was somewhat emaciated; skin slightly jaundiced. Epistaxis occurred several times. There was considerable nervous trembling and delirium at times. He had quite an annoying bronchial cough; a little tenderness of the abdomen, but no eruption. The tongue was red and coated. A change occurred on the 29th of April; a chill followed by nervous shock, rise in temperature, abdominal pain, and vomiting, the latter continuing until death. The temperature ranged from 38° to 40° C.

Autopsy.—The lungs were generally suffused with blood. The heart was normal in appearance, its left auricle distended with blood. The intestines were distended with gas; the coils fastened together with recent lymph. The great omental vessels and those of the mesentery and peritoneum were much congested. The lower part of the ileum was discolored and presented several ulcers of large size, one having perforated the intestinal wall, the aperture being about five lines

CASE OF CEREBRO-SPINAL FEVER.



Day of Disease.	24	25		26		27		28		29		30		31		1		2		3		4		5		6		7		
Pulse.	80	90	96	104	104	100	100	100	96	96	100	96	130	80	100	80	120	80	80	96	80	104	84	96	112	120	128	130	136	
Resp.			30	32	32	28	32	32	28	30	28	36	44	24	32	24	40	24	30	32	30	32	32	32	48	54	64	64	60	
Date.	May 24	25		26		27		28		29		30		31		June 1		2		3		4		5		6		7		

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in diameter each way. The peritoneal cavity contained a small quantity of pus. The spleen was soft and congested. The liver weighed 3,000 grammes, and was pale in color, its lobules showing very distinctly.

CASE 3.

Pneumonia.

J. M., aged 26; nativity, Ohio; admitted to the Marine Hospital, Chicago, Ill., February 5, 1886; died February 13.

History.—Patient had suffered for two weeks prior to admission from malaise, fever, and irritability of digestive organs. When admitted he presented the usual symptoms of enteric fever; was also suffering from an attack of dysentery, with great pain and tenesmus. Shortly after admission pneumonia supervened, developing with great rapidity and involving both lungs.

Autopsy.—Pericardial sac contained about 70 C.C. of straw-colored fluid. In both cavities of heart were found large fibrinous clots, the one in the right heart extending for about 15 centimetres into the pulmonary artery. The coronary vessels were much distended. Lungs: The entire right lung, with the exception of the anterior edge, was found to be in condition of red hepatization. The cut surface was granular, the tissue heavy, and did not crepitate. The middle portion of left lung was in condition of red hepatization, the upper part and base being in condition of gray hepatization. The purulent infiltration of the gray portions was so great that pus flowed freely on section, and they were exceedingly friable, breaking down into a pulp on pressure. Liver: Enlarged and congested. Spleen enlarged and softened. Mesenteric glands enlarged, soft, and dark-colored. Small intestine very much congested, the solitary glands and Peyerian patches being engorged, but not ulcerated. Kidneys in condition of passive congestion.

CASE 4.

C. C., aged 24; native of Illinois; negro; admitted to Marine Hospital, Saint Louis, Mo., April 8, 1886; died April 12.

History.—Patient stated that he had been sick only three days at the date of admission, when the symptoms were diarrhœa, moderate fever, mental stupor, gurgling in the right iliac region, a red dry, tongue, and sordes on the teeth. There was no eruption and none appeared. Sank rapidly, became unconscious, and died on the fourth day after admission.

Autopsy.—Body fairly nourished; *rigor mortis;* extensive ulceration of Peyer's patches, especially abundant in lower portion of ileum; very great enlargement of mesenteric glands, and general inflammatory condition of entire intestinal tract. No other organs examined.

CASE 5.

Œdema of Lungs.

W. C., aged 43 years; nativity, Pennsylvania; admitted to Marine Hospital, San Francisco, Cal., June 21, 1886; died June 30.

Autopsy (twenty-two hours after death).—Body not much emaciated. *Rigor mortis* marked. Abdomen distended and discolored, especially over groins and about the navel. Body generally covered with dark-

red subcutaneous patches of congestion, especially marked about the dependent portions. Large quantity of subcutaneous fat. Stomach and intestines much distended with gas. Omental vessels nearly empty. Considerable fat in omentum. Position of abdominal organs normal. Intestines of a pinkish hue. Blood vessels generally engorged. Stomach same. Lungs only slightly collapsed upon removing sternum, left more than right. Left lung crepitated slightly, right not at all. Lungs of a pinkish color mottled with gray. Left lung slightly adherent over diaphragm. Right lung generally attached by a few recent, and many old adhesions. Left pleural cavity contained a considerable quantity of bloody fluid, right the same. Pericardium contained about 50 centimetres of a straw-colored fluid, slightly tinged with blood. Heart of normal size, soft and flabby, brownish red in color. Cut surfaces of the heart of a light brownish red color, and very soft. A large fibrinous clot began in the left auricle, and extended through the ventricle some 8 or 10 centimetres into the aorta. In the right heart almost the same condition of things was found. The right ventricle also containing considerable dark-colored semi-fluid blood. The valves were all apparently sufficient. At the points of attachment of the clots there was some inflammatory thickening of the valves. Dependent portion of left lung almost solid. Old cicatrix about 2 centimetres in diameter on posterior aspect of lower lobe. Anterior portion of lung extremely œdematous. Cut surfaces of anterior portion of lung were of a decidedly red color, while those of the posterior (dependent) were dark brown. Lower lobe of the consistency of liver. Right lung same as left, and in addition a few patches of lobular pneumonia in lower lobe. Liver somewhat enlarged; its surface presented several patches of yellow discoloration, and many intensely engorged blood vessels; substance very soft, and of a light brown color, somewhat yellow in places. Spleen about two thirds normal size, very soft, and of an unusually dark color. Kidneys both of normal size, soft, capsule easily detached, leaving a smooth surface. The cortex and many of the pyramids much congested. Intestines: Walls considerably softened, contained a large quantity of bright yellow semi fluid flaky fæces. Mucous membrane reddened and soft. About 10 centimetres from cæcum there was a slightly-thickened patch on the inner surface of the ileum, opposite the mesentery, of intensely engorged blood vessels, oblong in shape, some 5 centimetres long by 2 centimetres broad. Its long diameter corresponded with the length of the intestine. A similar patch, only not quite so large, was also found in the large intestine, about 5 centimetres from the ileo-cæcal valve. No other portions of the intestinal walls presented either thickening or ulceration.

Case 6.

F. H., born in Iowa; aged 32 years; admitted to United States Marine Hospital, New Orleans, La., December 12, 1885; died December 26. *Autopsy (ten hours after death).*—Left lung œdematous. Right lung greatly congested, and the inferior half of lower lobe in state of red hepatization. Heart of normal size, its tissue pale, valves flabby and soft. Liver congested and hard, slightly cirrhotic. Spleen and kidneys presented nothing of special interest. Mesenteric glands very much enlarged. The small intestine was studded with ulcerations for about 40 centimetres above ileo-cæcal junction. The gut in the neighborhood of the cæcum was in like condition. Some of these ulcerations were from 1 centimetre to 1½ centimetres in diameter and penetrated

through mucous and muscular coat of intestine down to the peritoneal coat, and the slightest pressure from a stream of water caused perforation to take place.

In the appendix vermiformis was a seed, of some kind, about the size of a cherry stone, but of different shape. Apparently it had done no damage.

CASE 7.

G. F., aged 24; nativity, Ireland; admitted to the marine ward, Saint Joseph's Hospital, Baltimore, Md., December 10, 1885; died December 23.

Patient had been sick several days before applying for relief. At the time of his entrance into hospital, no characteristic symptom of enteric fever was present, but several days thereafter a cough developed, tongue became dry and fissured, and sordes formed on teeth. The temperature thereafter followed a characteristic course. Subsultus tendinum very much exaggerated. Delirium, principally at night, present for six days just previous to his death. Stimulants were resorted to, but the patient sank rapidly, dying from thorough exhaustion.

Autopsy (fifteen hours after death).—*Rigor mortis* developed moderately. Abdominal cavity alone examined; ulceration in several spots in small intestine; lungs congested; other organs normal.

CASE 8.

J. S., aged 23 years; nativity, England; admitted to marine ward Saint Joseph's Hospital, Baltimore, October 23, 1885.

The history of the case, together with the objective symptoms, pointed to a malarial disorder, and a diagnosis of remittent fever was made. Shortly thereafter evidences of the real nature of the affection became conclusive. The temperature ran a characteristic course, eruption appeared on the abdomen, tympanites, together with diarrhœa, made its appearance, and a well-marked peritonitis was evidently present. The patient's general condition grew gradually worse. Very marked subsultus tendinum was present, delirium succeeded, and on the morning November 3, 1885, at 10.30 o'clock, the patient died.

Autopsy (eight and a half hours after death).—Body emaciated, *rigor mortis* not developed. Abdominal cavity, on being opened, showed characteristic signs of previous inflammation. Bowels distended with gas, their external surface covered with flakes of yellowish curdled mucus, their internal surface smeared with soft, offensive ochre-colored fæces. Ulceration in small intestine was extensive, principally in region of ileo-cæcal valves. In the abdominal cavity there were about 500 cubic centimetres straw-colored fluid.

CASE 9.

Pleuro-Pneumonia.

M. C., aged 46 years; nativity, Austria; admitted to marine ward, German Hospital, Philadelphia, Pa., September, 19, 1885.

Patient was visited at a sailors' boarding-house and found lying on a couch, evidently very seriously ill. He had arrived there a few days before, coming from a vessel which had sailed from Charleston, S. C. He was unable to give any history of his sickness, and none could be obtained. He was removed to the hospital and the above diagnosis made.

On admission his temperature was 40° C.; pulse, 108; respiration, 35. Tongue was parched, teeth covered with sordes; diarrhœa profuse, tympanites and subsultus very marked. Lungs filled with moist rales, and expectorating freely rusty sputa. He gradually became worse, in fact his condition was hopeless from the beginning, and he died on the 22d instant at 5 o'clock A. M. During this time his temperature ranged from 38.3° to 40°, and his pulse from 100 to 120.

Treatment was addressed to symptoms and included ol. terebinth., tincture digitalis, ammon. carb., ammon. muriat., and alcoholic stimulants internally, with turpentine stupes externally.

Autopsy (*made at* 4.30 *p. m. same day*).—Body greatly emaciated; muscles and fat wasted; skin pale and vessels apparently bloodless; costal and pulmonary layer of pleura, on both sides, adherent to each other and to adjacent structures. Pleural cavities obliterated. Left lung hepatized throughout and filled with muco-pus. Right lung hepatized in lower lober congested in upper. Right lung weighed 1,575 grammes; left lung, 1,325 grammes. Heart and liver normal. Kidneys, both congested. Bowels, exsanguinous, except lower third of small intestine. Peyer's patches greatly enlarged and ulcerated—some almost to extent of perforation.

CASE 10.

E. H., aged 20 years; nativity, Norway; admitted to marine ward German Hospital, Philadelphia, Pa., August 19, 1885; died August 24.

Patient on admission gave a history upon which was based a diagnosis of irregular ague. The following day he was diagnosed as suffering with enteric fever. In probably the second week he presented the usual symptoms of this disease, including dry tongue, tympanites, hot skin, diarrhœa, &c., with temperature in mouth ranging from 38.5° C. to 40.5° C., and pulse from 73 to 100. Treatment was addressed to the symptoms, and consisted of turpentine emulsion, dilute solution of tinct. iodine comp., whisky, and an exclusively fluid diet.

His case progressed without any marked change until the morning of August 24, when he developed symptoms of congestion of the lungs, and sank rapidly, dying at 6.30 P. M. on that day.

Treatment on this day included, in addition to the above, tinct. digitalis 0.4 C. C., with ammon. carb. 33 gms. and ammon. muriate .66 gms. every two hours, and turpentine stupes over the chest.

Autopsy (*made at* 8.30 *a. m., August* 25, 1885).—Body not greatly emaciated. Hypostatic congestion well marked. Chest: Pleural serum 360 grammes; pericardial serum measured 45 grammes. Lungs: Left acutely congested; slightly crepitant and nearly normal in weight, displaced upward and to the left; right lung congested at base only, with very firm old pleural adhesions. Heart normal, but pericardial sac dilated with serum. Liver enlarged, extended beyond left nipple; congested in lower portion, with appearances indicating fatty degeneration; it weighed 2,150 grammes. Spleen, normal; weighed 730 grammes. Kidneys: Both showed parenchymatous nephritis. Stomach: Mucous surface congested throughout, with punctiform hemorrhages. Small intestines congested; Peyer's glands greatly enlarged and in various stages of ulceration.

CASE 11.

E. R.; nativity, American; was admitted to the marine ward Saint Franciscus Hospital, La Crosse, Wis., October 13, 1885. Died October 31. Diagnosis: enteric fever.

Post-mortem examination performed forty hours later. *Rigor mortis* marked, and hypostatic congestion in the dependent parts of the body; bed sores over the sacrum; the nostrils smoky; teeth and gums covered with a black coating.

On opening, the muscles appear very dark red, hard, and dry; the blood is thick and dark colored. In the heart and large vessels, dark-colored blood with coagulæ.

The lungs at the dependent parts show more or less hypostatic congestions; in the left lung splenization, and parts collapsed in the right pneumonic process. The heart is relaxed, its muscles of a dirty red color, and the vessels are infiltrated with discolored blood. The spleen is very much enlarged, the parenchyma of blackish red color. The stomach appears dark red from the injection of the finer vessels.

The small intestines: The solitary and Peyer's glands in the ileum and cæcum are considerably enlarged and prominent, of a grayish and reddish color, and of very soft consistence. The surrounding mucous membrane is exceedingly vascular and is the seat of an acute catarrhal process. Some of the glands have undergone a process of resolution; typhoid ulcers the most conspicuous lesion.

The mesenteric glands are much swollen secondary to the condition in the intestines. The process is advanced in the vicinity of the valve more than in the upper part of the intestine. In the colon the solitary glands have undergone the same changes as those in the small intestines. Perforation could not be discovered. The kidneys show more or less nephritis; they are a little enlarged and congested.

Brain and medulla not examined.

Case 12.

F. W., born in Nova Scotia; age 18; was admitted to marine ward, Sisters' Hospital, Buffalo, N. Y., November 14, 1885. Died December 1.

History.—He was sick in a boarding-house several days before his friends sent him to hospital. He became very delirious immediately after admission, and it was necessary to confine him to the bed; had a profuse diarrhœa, the stools being very slimy and containing bile. The passages were involuntary, and no remedies appeared to check them in the least.

Autopsy.—Bowels extensively ulcerated and many points of tubercular deposit. The gall bladder was filled with bile and appeared to be the seat of a catarrhal inflammation. The stomach was congested. Many points of tubercular deposit were found in the apices of both lungs. The heart was hypertrophied. The kidneys were healthy. No other organs were examined.

Case 13.

A. L. E., born in Nova Scotia; age, 21; admitted to marine ward, Sisters' Hospital, Buffalo, N. Y., August 19, 1885; died August 27.

History.—Had been ill about three weeks on boat, but would not give up his place. Was very weak when admitted and became delirious the day after and remained so till his death. His pulse was rapid, but quite strong, till the 25th of August, when he had two hæmorrhages from the bowels, losing about 50 cubic centimetres of arterial blood each time. He sank gradually after this and died on the 27th.

Autopsy.—The liver was much congested and enlarged as well as the spleen. The large intestines contained quite a quantity of dark blood.

Some of the ulcers of the intestines were very large and had nearly perforated the muscular coat, and some were covered with clotted blood. The kidneys were normal, also the heart. The lungs were slightly congested, and on the left side old adhesions were found in the pleura. No other organs were examined.

CASE 14.

J. C., born in Ireland; aged 24; was admitted to the marine ward, Sisters' Hospital, Buffalo, N. Y., August 20, 1885; died August 24.

History.—He was brought from the vessel and could give no account of himself. From a friend it was learned that he had been sick with a diarrhœa for three weeks. He became worse after getting to hospital, his pulse increasing to 160 beats per minute and very weak. On the morning of August 24 he suddenly showed signs of collapse, his skin growing cold and moist, his breathing slow and weak, his pulse too rapid to count, and very weak. He did not respond at all to stimulation and died that afternoon.

Autopsy.—Body greatly emaciated. Fæces in the cavity of the abdomen. The elium was ruptured about two inches above the ileo-cæcal valve, the rent in the intestine having a length of one inch. The right kidney small and hard, partly granular. Liver and spleen normal. Heart slightly hypertrophied; the left lung contained several small cicatrices. Other organs appeared to be healthy.

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TYPHO-MALARIAL FEVER.

Pneumonia, Ulcerative Enteritis, Perforation, &c.

W. J. L., aged 20, born in Canada, was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., March 8, 1886, and died June 15.

With the exception of an attack of scarlet fever and measles when a child, he always enjoyed good health until fifteen days before admission. At this time he began to suffer from loss of appetite, headache, and night sweats. On admission he was found to be quite anæmic; the night sweats continued, there was considerable cough and expectoration, rusty colored sputum, dyspnœa, fever, and progressive loss of flesh.

An examination showed consolidation of the lower lobe of the right lung, increased percussion dullness, and bronchial respiration. The diagnosis of lobar pneumonia was made and the patient placed upon appropriate treatment. The case improved slowly and by the first week in April was convalescent. General debility then followed, and soon symptoms of typho-malarial fever set in. He was accordingly read mitted on April 9. The disease followed the usual course, at times the ataxic symptoms of the typhoid state being very marked. Convalescence was very much protracted, the vital powers became very low, obstinate diarrhœa set in, albumen appeared in the urine, pneumonia and œdema of the lungs followed, and the patient died as above stated.

Autopsy (fifteen hours after death).—*Rigor mortis* absent; great emaciation; abdomen distended, and swelling of the lower extremities. On opening the thorax firm adhesions were found in the anterior mediastinum. The pericardium was filled with serum, the surface of the heart congested, and the veins very much engorged. The heart was in a state of diastole, and filled with *ante* and *post mortem* clots, otherwise the

organ was normal. Both lungs were very œdematous, firmly bound down by pleuritic adhesions throughout, and the lower lobes consolidated. Considerable effusion was found in the right pleural cavity. The bronchial glands were very much enlarged and in a state of ulceration. A small cavity was found at the apex of the left lung. The liver was very large and undergoing fatty degeneration. Extensive peritonitis and enteritis had existed and the abdominal cavity was filled with pus, the intestines covered with ulcers, many points of perforation found, and gangrene in several spots observed. Decomposition being so far advanced it was not deemed safe to examine the other abdominal organs.

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DYSENTERY.

Case 1.

D. C., aged 41 years; nativity, Germany; admitted to Marine Hospital, Port Townsend, Wash., October 30, 1885; died October 31.

History.—Patient a seaman of a Chilian ship; left San Francisco, Cal., October 21, 1885, bound for this port. The first day out complained of chills, followed by pains in abdomen. The captain of his vessel gave him two doses in succession of castor-oil, in addition to compound cathartic pills. Bowels commenced moving, and continued to do so until his arrival here. Admitted to hospital October 30, 1885, in almost comatose condition; bowels moving between twenty and forty times in each twenty-four hours; character of discharge mucous and bloody slime with occasional passages of dark grumous blood. Died eight hours after admission.

Autopsy.—*Post mortem* held eleven hours after death. Body was stiff, but *rigor mortis* not marked. Skin pale, eyes sunken, and body appearing much emaciated. Examination of encephalon, membranes anæmic, and brain substance markedly so, and soft and pliable, but beyond this and the presence of about 16 C. C. of bloody serum at the base, nothing abnormal was discovered. Chest: Heart in diastole, and blood in left and right ventricles forming *post-mortem* clot. Lungs: Normal in gross appearance, with the exception of congestion (hypostatic, probably) in posterior and lower portion. Abdomen, stomach, and small intestines shriveled and anæmic. Large intestine congested and inflamed for half of ascending, all of transverse, and all, but particularly the lower portion, sigmoid flexure and rectum of descending colon. Small pieces of pseudo-membrane, some partially detached, leaving spots of erosion, were generally observed. Two small ulcerations, one about the size of a split pea and one larger, were found in the wall of the sigmoid flexure. No perforation.

Case 2.

C. A., aged 38; nativity, New Jersey; admitted to Marine Hospital, Port Townsend, Wash., March 15, 1886; died March 18.

History.—Was sent to this hospital by American consul at Victoria, B. C. On admittance complained of great pain over abdomen generally, and passages averaging twenty a day. Disease had lasted six weeks. Passages characterized by presence of blood.

Autopsy.—*Post mortem* eighteen hours after death. *Rigor mortis* not marked. The entire extent of large intestine congested and covered with innumerable small ulcerations, more distinct near sigmoid flexure. No perforation; no peritonitis. Other organs anæmic generally, but normal.

INTERMITTENT FEVER.

Diarrhœa.

T. W., aged 30 years; nativity, England; admitted to marine ward, German Hospital, Philadelphia, Pa., August 6, 1885. Died August 9.

Upon admission the patient was in a very weak condition, suffering with ague quotidian and diarrhœa, accompanied by constant abdominal pain. He was given mistura cretæ comp. in 8 gm. doses every 2 or 3 hours, with hot fomentations to abdomen until bowels were checked, and pain relieved; also quinine sulphate in 0.33 gm. doses every 4 hours. On (Friday) 7th instant he was in a somewhat improved condition, but having an occasional cramp in abdomen, which was relieved by warm fomentations and applications of mustard. Calomel 0.1 and sodæ bicarb. 0.20 gm. were then administered every 2 hours for their alterative effect, and quinine sulphate 0.33 gm. was continued.

On the following day was apparently improving, but again complaining of an occasional cramp-like pain in abdomen; he was again relieved by the renewal of hot fomentations, &c. As bowels continued loose opium suppositories 0.33 gm. each were administered during the day; the night was passed fairly well, occasionally disturbed by action of bowels.

The following Sunday morning patient was in a fair condition, but very weak. At about 11 A. M. pains very severe and of greater intensity returned; stools contained some blood. Opium, brandy, and milk were freely administered, but with no apparent advantage. He passed into an exhausted condition, and died at 2.30 P. M.

Autopsy.—Acute catarrhal inflammation of stomach, punctiform hæmorrhagic indurations along lesser curvature, and chronic indurations at cardiac extremity. Small intestines contained mucus and pus streaked with blood, a hyperæmic condition of the mucous membrane and intestinal glands, manifested by redness, swelling, and œdema—old and well marked. Catarrhal congestion of the mucous membrane of the large intestines. Peritoneum hyperæmic, infiltrated with air, and contained about an ounce of serous fluid, of a bright yellow color; mesenteric glands undergoing cheesy degeneration. Kidneys: Capsule slightly adherent; formation of small cyst in cortical substance of right kidney, with development of primary stage of parenchymatous nephritis. Right kidney slightly enlarged. Spleen swollen (ague cake), soft, filled with blood, and of an olive color; weighed 480 grammes. Liver engorged, swollen, and cirrhosed; weighed 2,470 grammes.

CASE 2.

Lobar Pneumonia.

J. S., aged 49 years; nativity, Sweden; admitted to Marine Hospital, San Francisco, Cal., May 17, 1886, died May 20.

He gave the following history upon admission: For three weeks previous to one week since, had had a chill followed by fever and sweating every third day. For the week prior to his entering hospital had been feeling "bad all over," no appetite, sleepless at night, and a somewhat severe constant pain in right side and under sternum; no cough of consequence and no expectoration. May 17 had a chill followed by high

fever, in which condition he presented himself. His condition at that time was as follows: High fever as indicated by high, rapid, and irregular pulse; great thirst, considerable pain under sternum; head aching severely; very dull mentally; answered questions hesitatingly, and many times irrelevantly; heart sounds "soft" but otherwise normal, except rapidity and occasional irregularity; some dullness over right lung; no rales; left lung apparently normal, respiration "jerky" and much increased in frequency. Case diagnosed as intermittent fever, (quartan type); was better next morning; no elevation of temperature; still very dull mentally; had urinated normally; no œdema of extremities; no ascites; great thirst and headache; no additional information obtained as to previous history. Evening temperature 38.2° C.

May 19.—Had been breathing with considerable difficulty since 3 A. M., otherwise was "just the same." Examination of chest revealed crepitant rales generally diffused throughout right lung, but especially numerous over middle and lower lobes; many large mucous rales also. Almost total absence of respiratory sounds over upper lobe. No bronchial breathing. Vocal resonance increased over entire lung. Flat percussion note over all but lower lobe.

Left lung: Many large mucous rales generally diffused throughout the lung; increased percussion resonance. No cough, no expectoration. Temperature, 38° C. at 8 A. M.; at 11 A. M., 38.6° C.; at 5 P. M., 39.2° C. Death occurred suddenly at 7 P. M.

Surface presented great venous congestion. Urine drawn at 11 A. M., (250 C. C.) high colored, contained albumen in small quantity, phosphates, and a few granular casts.

Autopsy (*twelve hours after death*).—*Rigor mortis* marked, surface generally, especially of the head and neck, discolored from venous congestion.

On making the incision through the skin, cellular, and muscular tissue over the thorax in order to get into that cavity, the structures named showed many engorged veins. The abdomen was greatly distended, tympanitic on percussion. Body extremely well nourished; physique exceptionally vigorous.

Thorax: Walls of right pleura adherent throughout. No fluid. The upper and middle lobes in a state of pneumonic consolidation; considerable bloody serum could be expressed, and sections there showed so-called hepatic appearance. The lower lobe was emphysematous, congested, œdematous. The left pleura was normal. The entire left lung was congested and emphysematous.

Heart: Enlarged and covered with fat; the muscular tissue somewhat hypertrophied. An extensive clot, fibrinous, and firmly adherent was found in the left ventricle, reaching through the aortic orifice into the caliber of that vessel and ramifying into all the great branches given off from the arch. The clot and its branches were beyond doubt *ante mortem*, except perhaps a blood clot at the extremity of the ramification in the left subclavian artery.

Abdomen: Stomach and intestines much distended with a not very fetid gas. Lower portion of stomach and intestines somewhat congested and the former organ a little inflamed.

Liver: Fatty; soft, but not enlarged; some hypostatic congestion.

Spleen: Somewhat enlarged; soft; darkly congested; pulpy.

Kidneys: Normal

CASE 4.

Epilepsy.

H. J.; aged 50; native of Germany; admitted to the marine ward Saint Mary's Hospital, Galveston, Tex., June 28, for malarial fever, and died at 1.30 A. M., June 30, 1886.

History.—Malarial exposure on the San Jacinto River. Had contracted fever some days before admission.

On examination he showed a furred tongue, but normal conjunctivæ and skin; bowels said to be free; urine red; no headache, nausea, nor vomiting; temperature, 37.2°; pulse 84.

A mercurial purge was ordered, and five grains quinine every three hours; light diet.

June 29.—The orderly informed the house-surgeon at 7 P. M. yesterday that patient was having a severe fit; this was epileptiform. When seen at 9 A. M. he said he felt much better; tongue clearing, bowels having moved freely. He laughed when the nurse stated that he ate too much. Eyes clear; skin moist; ordered Cit. Ferri et Quin. solution with nux vomica. Patient improved and did well during day, eating three hearty meals and being about the grounds all day. At about 7 P. M. he had another convulsion of extreme severity. The house surgeon called, and everything was done to relieve the patient, but to no purpose. He died at 1.30 A. M. on the 30th, in semi-coma, after six hours of convulsive attacks, with but short intervals. After the first fit, he was semi-conscious, but thenceforth all consciousness was lost.

Autopsy (*eight hours later*).—All organs of abdomen and thorax were examined minutely. Kidneys were perfectly normal, and bladder in good condition, with about 150 C. C. of limpid urine in it. Urethra normal; intestines, stomach, and spleen perfectly healthy. Liver showed a little superficial fatty change. Gall-bladder contained about 50 C. C. of bile; no gall-stones there or in the duct. Lungs, heart, and vessels of thorax normal; calvarium removed and the brain with 5 centimetres of cord removed carefully; no congestion of note about the vessels on its surface. Lateral sinuses and longitudinal sinus were full of dark blood. Pia mater appeared normal before removal. No increase of cerebro-spinal fluid observed. Sections of the portion of cord removed gave negative information, as did also those through the medulla and pons. Section, exposing the lateral ventricles, showed nothing abnormal. The fimbriated body and overlying choroid plexus of the reflected pia mater was slightly congested, and the ventricle held about 30 C. C. of serum. Corpus striatum and optic thalamus were of normal appearance on section. Fourth ventricle gave no evidence of disease nor of pressure. Brain not congested nor yet anæmic. Internal surface of calvarium smooth, with no evidence of old injury; no evidence or history of syphilis. Cadaver rigid and well nourished. Hypostasis about buttocks and shoulders. Death from intermittent fever, complicated by epileptiform convulsions.

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REMITTENT FEVER.

CASE 1.

W. K.; aged 22; unacclimated; German, who had only been in this country and upon United States vessels for three months; applied for office relief Key West, Fla., March 28, 1886; stated that he had chills

and fever, probably contracted a short time prior to this time, while in Mobile Bay. Returned the next day, and was admitted to Marine Hospital at 6 P. M.; complained of slight frontal headache, with some fever and constipation. Ordered cathartic and quinia capsules.

April 2.—Temperature normal, P. M. 38.3° C.

April 3.—A. M. temperature normal, P. M. 38.3° C.

April 4.—A. M. temperature 38.9° C., P. M. 40.5° C. Bowels open, fair quantity of urine withdrawn by catheter, specific gravity 1028, slightly acid and smoky; 30 per cent. of albumen present; complains bitterly of frontal headache; no backache; skin slightly saffron color. Disease now being characterized by a high temperature and low pulse; pupils normal; abdomen "boat-shaped," noticeable in meningeal complication. Headache relieved by the application of cold, &c.

April 6 (7.30 A. M.).—Temperature 40° C., patient is semi-comatose, and does not appear to move left arm and leg. 3 P. M. temperature 41.7° C.

All treatment, including cold to head, cold pack, counter-irritation, &c., proved unavailing, and death occurred at 8.30 P. M.

Autopsy (6.30 A. M. *April* 7).—Serous yellowish bleb about the size of dime formed upon conjunctiva of left eye. Dura mater non-adherent, brain somewhat congested, meningeal vessels prominent, slight quantity of sero-purulent matter beneath pia mater of middle right lobe, more noticeable near fissure of Rolando, and convolutions somewhat less sharply defined in this region, which would account for the perceptible loss of motion upon the left side. No evidence had been obtained of a blow upon the head, nor history to show a tuberculous diathesis; some effusion was found at the base; brain otherwise normal.

Lungs œdematous; 75 C. C. serous fluid in pericardial sac; *ante-mortem* clots found in aorta and pulmonary arteries, and also intimately wrapped in the musculi pectinati; valves normal.

Liver presented the nutmeg appearance, with evidence of parenchymatous degeneration towards the periphery, its weight being 2,880 grammes.

Spleen increased in size and congested, weighing 570 grammes; no structural change noted.

Kidneys showed congestion common to other organs. The capsules were non-adherent, and pyramids well defined.

CASE 2.

T. B.; aged 22; nativity, North Carolina; admitted to Marine Hospital, Wilmington, N. C., February 6, 1886.

History.—When he was admitted the pulse at wrist could not be detected, and he could not talk. Later he complained when asked, of general soreness. There was no diarrhœa or abdominal tenderness; no frontal headache, epistaxis, or rose spots. No cough or pain in chest. Tongue coated. He had been sick 4 to 5 days. His temperature was never above 39°. There were morning remissions to near normal. On the 11th he seemed much better. On the 12th he was taken suddenly worse and died at 4 A. M. His temperature was steady at 37° from the 10th.

Autopsy.—Left lung normal; right lung seat of hypostatic pneumonia. Coronary veins full of blood. Valves normal. Left ventricle contained large *ante-mortem* clot. Spleen enlarged and pulp softened. Liver enlarged and its upper surface showed eight white spots of varying size beneath the capsule. On incision the white material looked

like fibrinous material about to break down. Hepatic tissue soft and friable. Under the miscroscope there were many leucocytes, and the intercellular tissue in places was softened. The hepatic cells were markedly granular. Kidneys normal. Weight of organs: Liver, 2,530 grammes; spleen, 460 grammes; right kidney, 185 grammes; left 174, grammes; right lung, 1,440 grammes, left 660 grammes; heart, 420 grammes.

CASE 3.

Lardaceous Liver.

G. M.; born in Maryland; aged 33 years; admitted to Marine Hospital, Mobile, Ala., July 2, 1885; died July 23.

History.—Had been ill on board his vessel at quarantine station, Mobile Bay, for about a week before his admission. He had a chill, followed by fever, which seemed to have been continuous, and suffered from vomiting, &c. Previously he had not enjoyed good health for several years, though he had been able to continue his duties as first mate of the vessel even while in the tropics.

Condition on admission.—Very weak; emaciated; skin hot and dry; temperature 39.4°; pulse 120; tongue flabby and white-coated.

Treatment.—Diagnosed "remittent fever," and ordered a hot bath; then tr. opii. 2, followed in half hour by pulv. ipecac 2. This produced an emetic and cathartic action.

July 3.—Quin. sulph. 1.33 were given early in the morning, and at 9 o'clock A. M. his condition was greatly improved; his temperature was normal, and he complained of no pain. He was allowed only milk and lime-water, and to relieve the irritability of the stomach tincture iodine, two parts, and carbolic acid, one part, were given in drop doses every three hours. There was no rise of temperature after July 3, and his pulse remained about 80 during the entire time of his illness. An examination of his abdomen showed that his liver was enlarged and slightly tender on pressure. Any movement of his body and any pressure on abdomen caused vomiting of a greenish, sour, bad-smelling fluid. Every remedy that could be thought of was tried, but failed to relieve the vomiting. Nutritive enemata were given, and served to prolong life for a few days. His mental condition became impaired, and he refused to speak or take any interest in himself.

July 23.—A violent vomiting spell caused great exhaustion, from which he did not rally, and he died at 10 P. M.

Autopsy.—Body emaciated; skin yellow; lungs and heart were normal; liver occupied about one-third of abdomen; weighed 3,500 grammes; one section showed the glistening appearance of the waxy or lardaceous liver. Tested with tincture iodine the mahogany color was produced. Stomach and intestines were empty, and showed no signs of disease. Spleen was double the usual size. Kidneys were normal.

CASE 4.

T. M.; aged 49; nativity, England; admitted to marine ward Saint Joseph's Hospital, Baltimore, Md., October 23, 1885. The personal history of the patient was decidedly unsatisfactory; he was in an almost unconscious condition, and all the information derived from the patient was that he "was weak, had been hard worked, and had played out." Examination showed no marks of violence. His general appearance,

being thoroughly blackened with coal-dust, indicated that his occupation had been that of fireman.

At 2 o'clock, soon after arriving at the hospital, his temperature was found subnormal, registering 35.7° C.; respiration 38; pulse 98; pupils markedly contracted; tongue, moist and pale. Auscultation revealed a very slight aortic murmur, and puerile respiration present in both lungs. Pressure at the umbilicus and in the right hypochondriac region caused the patient to wince and grow restless. Gentle stimulation was resorted to; small doses of whisky frequently repeated until a reaction set in. At 7.30 P. M. same day the temperature had reached 37.22° C.; respiration 32; pulse 90.

At 7 A. M. the following day the temperature had risen to 40° C. Respiration labored, delirium lasting from almost the time of entrance into the hospital, had grown deeper. Pulse 110 and very weak. The patient passed about 380 C. C. of urine the night previous in a bottle, which on examination proved free of albumen. The succeeding night about 500 C. C. urine was passed involuntarily in bed. 9.30 A. M. of 24th, delirium had deepened into coma; skin was moist; temperature 37.4° C.; respiration stertorous; occasional starts and sighs as if in pain; would carry the hand to abdomen, grasp the integument about the umbilicus, as if the whole disorder was located there. The abdomen was not tympanitic. Dullness of liver much extended above and below; likewise the spleen. 3.30 P. M., temperature 38.55° C.; respiration stertorous; pulse rapid and thready. Life was extinct at 4 P. M., the patient having lived but 28 hours after entering the hospital.

Autopsy (twelve hours after death).—*Rigor mortis* moderately developed. Body of a man apparently 55 years old. Height 1.85 metres: average build. Pupils normal; arcus senilis in both eyes; slight central cicatrix in cornea of right eye.

Cranial cavity: Dura mater cut through, having been found normal. The pia mater is seen to be somewhat œdematous, but easily stripped from the brain. The surface of brain of dark drab color. Cutting into the hemispheres, exploring the fissures, and examining the ventricles developed no additional abnormalities.

Thoracic cavity: Lungs dark with coal-dust, and slightly congested. Old adhesions of pleura. Heart normal, but small fusiform aneurism of arch of aorta present.

Abdominal cavity: Entered by long incision; little adipose tissue present; liver much enlarged and of bronze hue; gall-bladder distended, with very dark bile. Spleen very much increased in size; extremely brittle; of a marked reddish-brown color, and greatly congested. Stomach contained about 128 C. C. thin yellowish fluid. Kidneys normal; intestines free from ulceration or other pathological condition; bladder empty.

CASE 5.

M. G.; 50 years old; born in Ireland; admitted to the Marine Hospital at New Orleans, La., June 29, 1885; died July 21.

Autopsy (four hours after death).—Body somewhat emaciated; *rigor mortis* well marked. Brain: Dura mater somewhat thickened, but otherwise normal. Sinuses filled with blood; arachnoid slightly opaque; beneath this membrane there was an abnormal quantity of serum, but there was not a corresponding amount in the ventricles. There were areas of congestion of the pia mater, particularly over the upper part of the anterior lobes. A spot of broken-down gray matter was situated in the right inferior temporal convolution. Lungs firmly adherent to

chest-walls; on the right side the pleural cavity obliterated. The lower lobes and bases deeply congested, and somewhat œdematous; otherwise normal. Heart normal in size; mitral valves slightly thickened. Liver congested, but otherwise normal. Spleen enlarged and soft. Kidneys normal.

CASE 6.

Hobnail Liver.

J. R.; age, 37; nativity, Maryland; admitted to Marine Hospital, Saint Louis, Mo., July 12, 1885; died July 13.

Autopsy.—Body fairly nourished; *rigor mortis* well marked. Thorax: Heart, substance firm, size normal; cavities filled with *post-mortem* clots. Lungs highly congested, especially posterior portions; a frothy, bloody serum exuded from the cut surface; a few old and very firm pleuritic adhesions found. Abdomen: Liver, upper surface so firmly adherent to diaphragm that they could not be separated without rupture of substance of liver (hobnail liver); the entire gland pushed up and to the right by the distended stomach. Stomach distended with gas, and contained about a quart of semi-fluid blood; mucous membrane, posterior portion, very red, inflamed, and soft. Spleen twice normal size; substance soft and easily broken with the finger. Kidneys enlarged and congested.

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ERYSIPELAS.

Œdema of Lungs.

R. S.; aged 22; was admitted to marine ward, Saint Mary's Infirmary, Galveston, Tex., October 6, 1885, in a semi-conscious condition. His friends stated that he had suffered from chills for some time. General appearance that of malarial toxæmia. Was put upon appropriate treatment, and for several days he seemed improved. Tongue cleared and consciousness restored. Temperature reduced from 39.5° to 37.2°; pulse 93. On afternoon of the 8th October the nurse had his attention called by patient to pain over the left side of chest. He reports that it looked "rosy" and was very sore to the touch. On morning of the 9th I found this blush had extended upward into the axilla and downward to the crest of the ilium. Some puffiness, with œedma. Temperature 38.5°; pulse 100. Great anxiety and restlessness. Hyperæmia of lungs. This was diagnosed to be erysipelas, and as active treatment instituted as his already weakened condition would permit. Quinine with tr. ferri chlor. was given freely, together with stimulating and nutritious foods. On the 19th the inflammation was decidedly phlegmonous, but his condition, from intense pulmonary œdema, was so critical that I had to refrain from incisions. Patient at this visit was evidently *in articulo mortis*. Death ensued at 2 A. M. of 11th October.

Autopsy (ten hours after death).—Face, neck, and arms, and whole body, cyanotic. Hypostasis about shoulders and buttocks. Inflamed area extended from the left axilla to the crest of left ilium. Skin had become sodden and torn from local applications, and therefrom oozed a little serum. Incisions to the ribs gave evidence of the extension of the inflammation to the deeper structures. Upon the surface of the intercostals there was a collection of sero-pus in small quantity. Vis-

cera examined carefully. There was no evidence of any pleuritis or pericarditis. Lungs were carbonaceous; sections floating very low in water. Copious oozing from cut surfaces. No evidence of pneumonitis. Heart and kidneys normal, as were the intestines. Liver and spleen slightly enlarged.

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MALARIAL TOXÆMIA.

Aortic Stenosis.

E. C.; aged 63; nativity, Kentucky; was admitted to Marine Hospital, Memphis, Tenn., February 5, 1886, and died six hours after admission.

This patient was first seen on October 24, 1884. He was not treated in hospital, but his case presenting some interesting features, the history was taken. Had been a hard drinker all his life. First had chills and fever when a child, and irregularly ever since. For the previous five years he had suffered from hypertrophy of the spleen, dyspnœa, and irregularity of heart's action; bought medicine for this trouble. When examined, the skin was of a pasty-white color; breathing rapid; systolic bruit over left ventricle and exaggerated arterial pulsation; abdomen pendulous, a right inguinal hernia; the spleen was hypertrophied, extending from an inch superior to the left anterior superior spinous process of the ilium to the sixth rib, and was tender on pressure. He was given a prescription for Donovan's solution, gtts. x every two hours. October 29, 1884, he reported at the office; the spleen was smaller and less tender; he felt much easier; the urine was normal. The medicine was changed to ten drops three times a day; and the patient failed to report again. In 1885 he stated the spleen decreased in size while taking the medicine, but immediately enlarged when the drug was finished. When admitted to the hospital he was very weak; no particular lesion evident; stated that he had been ill for several days. Patient evidently dying, death occcurring about six hours after admission.

Autopsy.—The necropsy was made thirty-eight hours *post mortem*. *Rigor mortis* well established. Varicose enlargement of the veins of the left leg and thigh.

The calvarium was very thick. On removing it a quantity of cerebral fluid tinged with a brownish-red (hæmatin) exudate escaped. The brain weighed 1,504 grammes, and was normal.

One hundred and ten C. C. of fluid was removed from the right pleural cavity. The right lung was adherent to the costal pleura at the apex and the base; heavy carbon deposit externally. An interstitial connective-tissue hyperplasia evidenced the existence of a former pneumonia. The caliber of the bronchii was diminished by this compression. The right lung weighed 750 grammes. The left lung weighed 625 grammes, and presented a pathological appearance similar to the right lung. The left pleural cavity contained 55 C. C. of serous fluid.

There was a deposit of fat on the right ventricle of the heart. The left ventricle was hypertrophied, and there was a stenosis of the anterior cusp of the mitral valve. The heart weighed 610 grammes.

The liver weighed 2,530 grammes; fatty. The capsule of the spleen was irregularly thickened and of an opaque, white, cartilaginous character. The splenic tissue was of a dark color, very friable, resembling coagulated blood. The spleen weighed 1,150 grammes. The right kidney weighed 120 grammes; the left, 130 grammes. Each was hard, evidences of a chronic interstitial nephritis. The pancreas, stomach, intestines, and bladder were normal.

SECONDARY SYPHILIS.

C. C.; aged 43 years; nativity, Massachusetts; admitted to Marine Hospital, Boston, Mass., for the fourth time for secondary syphilis, on July 13, 1885; died March 3, 1886.

History.—This case will stand as a conspicuous example of the malignity of syphilitic infection and the failure of the usual medication to always control the symptoms of the disease. He was first admitted to this hospital January 16, 1883, and discharged therefrom September 6, 1883; the second time, two months later, November 5, 1883, to May 29, 1884; the third time, September 18, 1884, to April 5, 1885; the fourth and last time, July 13, 1885, when he remained till his death, March 3, 1886. His personal history was romantic, and included service during the Sepoy mutiny in India and with Gordon in the Chinese war, and it is probable that the hardships of those campaigns in a foreign climate impaired his general health. The clinical history of this case is one of progressive cachexia. Iodide of potash was prescribed in all degrees of dosage until it could not be tolerated, and for the last two years he could only bear a few doses of it before his stomach would reject it. The cartilages of the nose ulcerated away, and finally the turbinated, ethmoid, vomer, and palate bones became carious and sloughed away in fragments, until the whole nasal cavity was open and the view of the basilar process of the occipital unobstructed. Severe trifacial neuralgia became one of the most distressing complications, and was only relieved by large doses of chloral. During the last six months there occurred intermittent ptosis of the right eyelid, which finally became permanent. It was occasionally accompanied by divergent squint and deafness. His speech was affected by the loss of the palate bone.

His appetite was scarcely enough to be called a desire for food, and the toleration of aliment was curiously capricious. He was unable to retain the most delicate food specially prepared for him, such as starches, milk, eggs, &c., but would eat with impunity sardines, salted fish, uncooked, fried ham, cabbage, and such food, ordinarily hard of digestion. He would sometimes scarcely eat anything for many days together, and finally died of exhaustion and starvation. This anorexia was a remarkable feature of the case.

Autopsy.—Rigor mortis present; body greatly emaciated; ensiform cartilage ossified; lungs very small, and infiltrated with a gummous matter. There was a considerable deposit of fat in the mesentery and omentum. Stomach pale, and mucous membrane very smooth; the rugæ generally absent; kidneys small, nodulated, infiltrated with yellow gummous substance, about the size of beans. Right kidney weighed 70 grammes; left kidney weighed 105 grammes; œsophagus very small. Brain: The general cerebral substance was very hard, having the consistency of a brain preserved in alcohol. An abscess was found in the right optic thalamus, tænia semicircularis, and corpus striatum, extending nearly to the base of the brain. The ethmoid and part of the sphenoid and nasal bones were absent.

CASE 2.

T. S.; aged 23; nativity, Masschusetts; admitted to Marine Hospital, Detroit, Mich., November 18, 1884.

Family history unknown. Was admitted with a large chancre on foreskin, which healed very slowly. Was readmitted February 16, 1885,

with a well-marked rupial eruption of secondary syphilis. The following month had an attack of typhoid fever, lasting two months, during which time the rupia entirely disappeared, but returned again as soon as the patient was fairly convalescent. Two months before death convulsions of an epileptiform character were of frequent occurrence. Died April 4, 1886, from exhaustion.

Post mortem (*ten hours after death*).—Body extremely emaciated; skin covered by large rupia scabs and scars of former sores; scalp nearly free from hair; lungs normal; heart small and contracted; liver enormously enlarged; its inferior margin extending below the umbilicus, the left lobe overlapping the spleen; weight 3,712 grammes; on section numerous syphilitic deposits of large size were seen; spleen, stomach, kidneys, and intestines normal; mesenteric glands much enlarged; brain somewhat shrunken, tissue very firm and hard; subarachnoid fluid unusually abundant.

NOTE.—Iodides and mercurials had no effect whatever in staying the course of the disease.

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CARCINOMA AXILLARY.

L. A. H.; aged 36; nativity, Ohio; admitted to Marine Hospital, Cincinnati, Ohio, April 24, 1886; died May 12.

History.—First noticed enlarged axillary glands about six months ago. Was in hospital two months to January 2, 1886.

Specific history negative. Skin and areolar tissue indurated over almost entire chest, anterior and posterior: marked with enlarged lymph glands, size of pea to hickory nut, smooth, glistening, pinkish, the condition known as "cancer *en cuirasse*." Similarly enlarged glands on the arm, some of which have the skin over them ulcerated. Superficial veins of trunk give a distinctly bluish color to the skin, most marked over the lumbar region. The right axilla very much distended by the enlarged glands, some of which have broken down, and are discharging a thin, dirty pus. Several times there has been considerable venous hemorrhage, easily controlled by compress. Arm and hand very much enlarged from interference of blood and lymph circulation. Large quantity of serum at times escapes from ulcerations in axilla; then there is less pain, and a reduction in size of arm. At no time, however, is the pain very severe; pulse 125; temperature normal; very little appetite but great thirst.

Treatment.—Supporting.

April 25.—Not so well; sleeps poorly; passing urine every hour or so.

April 27.—Considerable pain; deep aching in arm; color of spots everywhere much lighter, doubtless due to depletion from the hemorrhage and constant escape of serum.

April 28.—Profuse bleeding from rupture of vein during the night; more comfortable.

May 1.—Less swelling and discoloration; a very great deal of serum escaping, wetting clothing and bedding.

May 3.—Still less swelling; more hemorrhage.

May 4 and 5.—Comfortable; increasing amount of serum.

May 6.—Appetite improving; sleeping better.

May 7.—Considerable pus escaping from axilla; pulse 125; no pain; sleeping a great deal.

May 9.—Fairly comfortable; not sleeping well; discharging freely pus and serum; weaker.

May 11.—Sinking rapidly; died 7 P. M.

Autopsy.—Body fairly well nourished; *rigor mortis* well marked. Pink spots on skin of arm and chest that correspond to the glands beneath, now pale and much less prominent. Axillary glands enlarged, and matted together, forming a mass nearly as large as a human head. Chains of glands in all directions enlarged. Some of those in the axilla broken down into abscesses, and there is great difficulty in distinguishing the different tissues in this region.

Owing to the wishes of relatives no other portions of the body were examined.

CARCINOMA ANTERIOR AND MIDDLE MEDIASTINUM AND HEAD OF PANCREAS.

Jaundice.

J. H.; aged 32; nativity, England; admitted to marine ward German Hospital, Philadelphia, Pa., December 31, 1885; died February 20, 1886.

History.—Admitted with marked symptoms of jaundice and difficulty of respiration. History of gradually increasing debility, extending back several months. The jaundice developed about two weeks before admission. He complained of considerable pain in chest and epigastrium, which persisted during his entire illness. He had constant cough and dyspnœea, and rapid, feeble pulse, with frequent intermissions in the heart-beat. The gall-bladder was apparently enlarged, but there was no evidence of impacted gall-stones. Beyond the presence of jaundice and anæmia no satisfactory diagnosis was made at first examination, or at any time previous to his death.

His stools were characteristically white throughout. His jaundice never improved, and his dyspnœea and irregular heart action and anæmia became gradually more marked.

Treatment comprised sodium-phosphate, infusion of digitalis, belladonna, expectorants, stimulants, tonics, &c., but with no improvement at any time.

Autopsy.—Sections of the thorax showed a remarkable condition. The pleuræ were both inseparably adherent at the upper portion to the thoracic walls and to the lungs. Lower lobes of both lobes were normal. The apices and upper lobes of both were involved in a carcinomatous growth which filled the greater portion of the mediastinum and pressed tightly upon the trachea and large bronchi, and also the œsophagus and large blood-vessels.

There was found also a similar pathological growth involving the head of the pancreas, the pyloric end of the stomach, and the duodenum. The gall-bladder contained 100 C. C. of almost black fluid. Its duct was involved in the cancerous growth, and had probably been occluded by pressure. The mediastinal tumor weighed about 500 grammes, and the pancreatic tumor about 250 grammes. Liver and gall-bladder together weighed 2,060 grammes. The case is instructive, as illustrating difficulties in diagnosis, and shows the extent to which the mediastinum may be occupied by a foreign growth without earlier manifestations or speedy termination. This has been before observed in connection with large aneurisms of the aorta near its origin.

SCIRRHUS OF PANCREAS.

J. L.; aged 39 years; nativity, Sweden; admitted to Marine Hospital, San Francisco, Cal., June 11, 1885; died November 26. Autopsy showed *rigor mortis* marked. Body greatly emaciated. Abdomen: A large tumor, very hard and nodular, evidently scirrhous, was found involving the entire pancreas, pyloric end of stomach, duodenum, and the peritoneum posteriorly. The tumor was attached by numerous adhesions to the ribs on each side of the spinal column, and involved in its mass the aorta and vena cava inferior. These vessels were both compressed in places by the morbid growth, but no dilatation or roughening of either could be found. The other organs were not examined.

NOTE.—The original diagnosis in this case was aneurism of the abdominal aorta. The body was to be buried by friends, and it was necessary to make the autopsy hastily. Hence the autopsy was not continued further.

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TUMOR OF HEAD OF PANCREAS.

C. J.; age—; Norwegian; admitted to marine ward German Hospital Philadelphia, Pa., October 30, 1885; died January 12, 1886.

History.—A marked case of anæmia; skin and mucous membrane were pale, and emaciation extreme. Blood, microscopically examined, showed decrease of red corpuscles to about three-fifths normal. Appetite poor, and ingestion of food frequently followed by vomiting. Respiration shallow and feeble. Pulse slightly accelerated and with little volume. On admission there was discovered, about two inches above the umbilicus and to the right of the median line, a deeply-seated pulsating tumor, apparently the size of a man's fist. This remained without material change until his death, and was correctly diagnosed, as shown by the autopsy, as a tumor of the head of the pancreas, receiving its impulse from the aorta. The stools were persistently thin and almost white, numbering from two to six each day.

The treatment was symptomatic, and was fruitless except to relieve his distress, which was very great.

Careful thought was given to the advisability of explorative laparotomy, but was never considered proper, and the result showed that it would have been useless. He died of gradual exhaustion January 12, 1886.

Autopsy.—Autopsy, January 13, 1886, at 4 P. M., about 18 hours after death.

The only interesting point was the examination of the locality and nature of the tumor, which was found to consist of the enormously dilated and hypertrophied head of the pancreas. It was double the size of the adult fist and had hypertrophied walls, which, however, showed throughout pancreatic tissue. The central part was a broken-down, soft, cheesy mass, pultaceous in the most central part and communicating with the duodenum about an inch below the proper entrance of the pancreatic duct. The latter was occluded, and it is thought probable that this occlusion, from whatever cause, was the origin of his trouble. The tumor was tightly adherent to the pyloric end of the stomach and to the duodenum and transverse colon.

The termination of the ductus choledochus communis was not satisfactorily demonstrated, but the absence of distension of the gall-bladder,

and of symptoms of jaundice during life, seem to prove that this duct must have been patulous. All the thoracic and abdominal organs were anæmic.

The lungs were retracted, but crepitant. Cause of death, exhaustion, due to want of digestion of food.

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CARCINOMA OF STOMACH.

Case 1.

Scirrhus (supernumerary spleen).

L. N.; born in Louisiana; 49 years old; negro; admitted to Marine Hospital, New Orleans, January 30, 1886; died February 23.

Entered hospital with extreme debility and emaciation. Paroxysmal pain in stomach has existed for about four months. A hard tumor, not tender, is perceptible in the epigastric region. No hæmatemesis, and but little vomiting of any kind. Suffered but little pain after entrance, and died suddenly.

Autopsy (six hours after death).—Much emaciated. Abdominal walls retracted. One leg had been amputated several years ago. Abdomen: Intestines general empty and small. No adhesions to anterior wall of abdominal peritoneum, nor among the intestines. Omentum healthy, destitute of fat. Gall-bladder distended. Liver normal. The pylorus, all the lesser curvature of the stomach, about five centimetres of the œsophagus, and the greater curvature for about half way from the pylorus, were occupied by a neoplasm, evidently scirrhous carcinoma. The greater curvature of the cardiac extremity of the stomach is healthy. Stomach is adherent to the diaphragm, which is also infiltrated by the neoplasm. Mesenteric glands enlarged and degenerated, but softer than the growth in the stomach. Stomach is adherent to the colon, which, at the hepatic flexure, is infiltrated by the neoplasm. The growth involved the pancreas and extended to the left supra-renal capsule. The pylorus easily allowed the finger to pass. Right supra-renal capsule also involved by the growth and adherent to the kidney, which, however, is healthy, as is the left kidney. Spleen very small. A small supernumerary spleen existed, attached to the lower border of the spleen by mesentery; no spleen pulp united them. Lungs: No pleural adhesions on left side; small amount of hypostatic congestion in the posterior lower portion of the left lung; otherwise normal. General adhesion of pleura of right side; lung rather smaller than the left, otherwise normal; heart in systole; valves normal.

Case 2.

C. B.; aged 33 years; nativity, New Hampshire; admitted to Marine Hospital, San Francisco, Cal., April 26, 1885; died August 24.

Autopsy (ten hours after death).—Body extremely emaciated; feet and ankles œdematous; abdomen protuberant and fluctuating; mass of soft, non-fluctuating glands in axilla; soft, boggy swelling on proximal phalanx of middle finger; phalanx about three times its normal size, and looks like syphilitic dactylitis. Abdomen: A large amount of serum, mixed with pus and flakes of fibrin, distended the peritoneal cavity, the lower part of which contained nearly pure pus. There were many adhesions of parietal and visceral peritoneum. The entrails were

glued together. The stomach, from the pylorus nearly to the middle of its length, is occupied by a mass, thicker on its posterior portion, evidently cancerous. The pylorus is contracted, distorted, and probably impassable to food on account of projecting masses of the neoplasm and the distortion. There are, besides, many nodules of the same material in other parts of the stomach; also in the spleen, which is adherent to the stomach, and in the right lobe of the liver. The duodenum was also affected, and that part of the large intestine crossing in front of the stomach. The latter was much dilated, and filled with food (milk) and water. There were some nodules also in the small intestines, and many mesenteric glands were affected. The nodules found scattered about were much softer than the main growth about the pylorus. A cavity like an abscess sac existed below the stomach and behind the colon and right lobe of liver. It was adherent to the stomach. Its inferior wall was the agglutinated mass of small intestines. An opening existed in this inferior wall. This cavity was partly filled with pus. Abdominal aorta not involved. Chest: Pericardium normal; no nodules apparent in pleuræ. A lump of glands in axilla were evidently cancerous, and also another gland near elbow—not Sigmund's. The latter were rather more like encephaloid. The tumor of the finger was probably cancerous.

CASE 3.

S. R. (colored); aged 46 years; nativity, United States; admitted to the marine ward, Mercy Hospital, Pittsburgh, Pa., November 17, 1885; died November 27.

This man when admitted presented the usual symptoms of catarrhal jaundice, and for a time apparently improved under a treatment of sodium phosphate. Two or three days before death he exhibited symptoms of mild delirium, and from this time retained nothing in the stomach.

Autopsy.—Upon opening the abdominal cavity a large black mass was found apparently filling the upper part of the cavity and extending nearly as far down as the umbilicus. It presented exactly the appearance of a large abdominal aneurism, and was supposed to be one until it was opened, when it proved to be the stomach very much dilated, with thickened walls (2 centimetres) engorged with blood. This infiltration of blood extended to the connective tissue, the omentum, and the duodenum, all of which seemed like a continuous mass of coagulated blood. A hard scirrhous growth occupied the pyloric end of the stomach through one-third of the length of that organ, completely surrounding the pyloric orifice and somewhat lessening its caliber. The liver was somewhat enlarged, its color light brown, its consistence very tough from cancerous infiltration, and it offered considerable resistance to the knife in cutting. The heart and kidneys were normal in appearance.

CASE 4.

A. R.; aged 40 years; nativity, Sweden; admitted to Marine Hospital, San Francisco, Cal., December 28, 1885; died March 18, 1886. Was admitted for dysentery, from which he slowly recovered, extreme constipation supervening. Some two months previous to death he began to suffer from anorexia and vomiting. Sarcinæ ventriculi were found in the matters vomited, and there was much fermentation of food taken. This condition did not yield to treatment, and he gradually grew weaker; symptoms of catarrhal inflammation and dilatation of the stomach appeared, for which the stomach pump was used. Upon first

introducing the tube some 2,000 to 3,000 C. C. of fluid, containing particles of half-digested and fermenting food, were removed from the stomach. Temporary improvement followed, but he soon again began to lose strength, and gradually succumbed. At no time did he complain of localized or continued pain; neither was any tumor or specially painful spot found by repeated examination.

Autopsy (*twenty-two hours after death*).—Extreme emaciation.

Thorax: Lungs presented marked pigmentary mottling over their surface. Right lung otherwise normal, except for a band of pleural adhesions at one point on its border. Left lung: Pleural walls adherent at innumerable points, or connected by bands of adhesion of greater or less length. This condition existed more or less over the whole surface of lung, where it was most marked, over a space the area of the palm on the outer aspect of lung. The superficial lung tissue was somewhat indurated, and there were indications of engorgement and local catarrh of smaller bronchi. Heart small, fatty, flabby. Pericardium, normal. Liver, spleen, and kidneys presented no abnormal conditions, except that spleen seemed small. Peritoneum and surface generally of abdominal organs were smooth and bluish in color. Stomach somewhat enlarged, but not very greatly so; it had encroached considerably on the normal situation of spleen, and forced that organ backward out of sight. Stomach was pretty full of a dark-brownish fluid, containing white rice-like grains in small quantity. The mucous membrane was covered with slimy secretion, and appeared anæmic, flaccid, discolored, and ecchymosed in a few spots. Cardiac orifice and greater curvature normal. Around pylorus, and involving the walls of stomach in their whole circumference for an inch and a half behind pylorus, was found a dense fibrous tumor, growing into the cavity of organ, and calibre of pylorus, but not projecting on outer or peritoneal aspect. Pylorus barely admitted end of little finger. The surface of the tumor presenting internally was somewhat eroded; the thickness of the cancerous mass (it was undoubtedly scirrhous) was 1 centimetre. The morbid growth did not extend into duodenum, but that portion of the intestine was remarkably dilated. There were no secondary glandular or other involvements, and no implication of pancreas or neighboring structures. Nothing abnormal in any part of intestinal tract.

CASE 5.

A. H.; aged 50; nativity, United States; admitted to Marine Hospital, Chicago, Ill., August 11, 1885; died October 10.

Gives a history of long-continued gastric disturbance. For several years has suffered from symptoms pointing to chronic gastritis. Digestion and assimilation exceedingly imperfect. In very short time fell into condition of great asthenia. Carcinoma suspected, but careful examination failed to reveal any physical signs to strengthen suspicion until shortly before death, when a small tumor was discovered at the pyloric end of the stomach.

Autopsy.—Stomach much contracted and showed evidences of inflammatory action. In the walls around the pyloric orifice, was found an adventitious growth resembling scirrhous carcinoma. The tumor, though small, had so encroached upon the lumen of the canal that it would barely admit the passage of a straw. The mesenteric glands, in the vicinity of the tumor, were enlarged and infiltrated. Dura mater of brain much thickened in places. Inflammatory adhesions and deposits of lymph along the longitudinal fissure. Cerebral substance soft and pale.

TUBERCLE OF LUNGS.

J. H.; aged 28 years; nativity, Ireland; admitted to the Marine Hospital, Boston, Mass., April 28, 1886; died June 20.

Patient had a cough for about one year prior to his admission to hospital. Percussion revealed solidification of the apices of lungs and a cavity in the upper lobe of the left when first examined at the hospital. Distressing cough, hectic fever, night sweats, dyspepsia marked the disease in its rapid progress.

Autopsy.—Rigor mortis present. Body emaciated and livid along the back from hypostatic congestion. Both lungs firmly united to chest-walls by pleural adhesions, and were thickly studded throughout with tubercles. Small abscess cavities were found in the upper lobes of both lungs. The pericardium contained 50 C. C. of serum.

Tubercles were found in the liver and spleen. The stomach dilated, and mucous membrane eroded in several patches the size of a silver quarter. Kidneys large and greatly congested. No deposit of tubercle found in small intestines or mesentery. Brain not examined.

CASE 2.

J. McA.; aged 44; nativity, Ireland; admitted to the Marine Hospital, Chicago, Ill., January 14, 1886; died March 25.

Autopsy.—Rigor mortis slight; body greatly emaciated. Upon opening the thorax both pleural sacs were found to be obliterated, the lungs universally adherent to the chest-walls. On the anterior surface of right lung there was an exceedingly thick and apparently recent false membrane. The lungs did not collapse, and both organs were filled with an enormous quantity of gray tubercles. A very few small cavities were found in the apices. The lung tissue was œdematous, bloody serum flowing on section. The pericardium contained 150 centimetres of clear serum. The heart was of normal size, its tissue soft and flabby. White fibrinous clots were found in all the cavities, attached with considerable firmness to the endocardium, extending through the auriculo-ventricular openings, and sending prolongations into the pulmonary artery and aorta. The liver was of normal size; shows signs of commencing fatty degeneration in certain portions. Spleen slightly enlarged; kidneys very anæmic; other viscera normal.

CASE 3.

C. A. H.; aged 24 years; nativity, Sweden; admitted to marine ward, Saint Vincent's Hospital, Norfolk, Va., April 5, 1886; died June 10.

History.—Upon admission to hospital the patient presented the characteristic symptoms of tubercle in an advanced stage, with signs of a cavity in apex of left lung.

Autopsy —Body slightly emaciated; *rigor mortis* well marked. Both lungs throughout their entire surfaces were closely adherent to inner surface of chest-wall the pleural cavities being almost entirely destroyed. Upon section they appeared to be infiltrated throughout with tuberculous deposits, the right lung showing in its apex a small cavity filled with pus, while in the apex of left lung was seen a cavity as large as a hen's egg.

The heart appeared unusually small, but its valves and walls were normal. Liver slightly congested; kidneys normal; other organs not examined.

CASE 4.

H. B.; aged 24 years; nativity, North Carolina; admitted to the marine ward Saint Vincent's Hospital, Norfolk, Va., January2, 1886; died January 18.

History.—Patient was admitted to the hospital in a very anæmic and emaciated condition, and was suffering from a bad cough, with abundant expectoration. Upon examination of the chest a small cavity was detected at the apex of the left lung. On the right side the symptoms were negative, save a slight dullness over the apex.

Autopsy.—*Rigor mortis* marked; body emaciated. The upper lobe of left lung was the seat of a cavity as large as a hen's egg. The bronchi were filled with a purulent secretion. The lower lobe was the seat of a small abscess. The right lung was in a state of gray hepatization. The heart was very much enlarged. The right lung was adherent to pleura by numerous lymph bands.

CASE 5.

E. A.; nativity, Sweden; aged 29 years; transferred from Galveston, Tex., to Marine Hospital, Mobile, Ala., November 2, 1885; died June 21, 1886.

With the transfer from Galveston, Assistant Surgeon Wasdin, M. H. S., reports: "On entrance to hospital at Galveston, in June, 1885, A. developed very rapidly an acute phthisis, which has been treated with the usual medicines, including poulticing. Various changes and phases have arisen and disappeared, and he is now much better than for some time past. Both apices are diseased, the right until very recently having been quite dull on percussion, a condition similar to that of the left, which yielded slowly to hot poulticing. The left lung is the most extensively diseased, but has cleared from below upward. His temperature has ranged from 37° C. to 38.8° C. from July to this time."

The foregoing sets forth the physical condition of the patient when first examined at this station, in addition to which there was complete aphonia, which persisted to the end. The exaltation of temperature was also persistent. With the free exhibition of quinine, Dover's powder, and nitrate of potassa, the temperature could be kept below 37.5° C., but with a few days' cessation of those remedies it would reach 39° C.

The treatment otherwise was general, stimulating, nourishing, and hygienic. In the latter respect he was, with similar cases, placed in the sunniest room in the building, cleanliness and thorough ventilation enforced, and as much outdoor life as practicable encouraged. Under this course Anderson more than held his own until the hot, sultry days of April and May came, when the disease assumed an active form, extending to the whole of both lungs, so that by June 1 he took to his bed for the last time.

There is no question in the reporter's mind but that the climate of the Gulf coast, from November to April, is well adapted for the comfort and physical well-being of those afflicted with tuberculous disease, but after the 1st of April and until November 1 the climate is so depressing that cases of tuberculosis will speedily succumb.

Autopsy.—*Rigor mortis* absent. Body thoroughly emaciated. Brain not examined. Thorax: Both lungs of an ash-gray color, and intimately and firmly adherent to chest-walls, diaphragm, and pericardium, from no part of which could the lung tissue be separated except by dissection. Both lungs were a mass of tuberculous nodules. The right lung contained

several cavities, from 3 to 6 centimetres in diameter, filled with thick yellow pus. The left lung was free from cavities. Heart small and pale; otherwise perfect. Nothing abnormal discovered in the abdominal organs.

CASE 6.

R. W.; aged 39; born in Maine; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., February 20, 1886, with phthisis in the third stage; died April 20.

Autopsy (nine hours after death).—Rigor mortis well marked; body greatly emaciated. On opening the thorax the lungs were found to be adherent to the chest-wall almost throughout their entire extent. The adhesion bands were well organized toward the back of the cavity. Both lungs were infiltrated throughout with small tuberculous deposits, varying in size from a birdshot to a buckshot. The right lung showed marked hypostatic congestion posteriorly, and at the apex a small cavity filled with pus was found. Surrounding this cavity the lung was so firmly adherent to the chest-wall that it could not be removed without laceration of its substance. Small spots of emphysematous tissue were found throughout the lung. The left lung was purple in color, and also showed hypostatic congestion, with three small cavities filled with pus at the apex. The bronchial glands were very much enlarged and deeply pigmented. Heart: The heart was found distended and filled with *post-mortem* clots. A large *ante-mortem* clot was found in the left ventricle, extending from the apex into the aorta. The right ventricle also contained an *ante-mortem* clot, and its walls were somewhat thinned. The coronary arteries were dilated to the size of a goose-quill; the valves were all normal, and a small amount of fat was noticed at the base, extending in a narrow strip to the apex. The heart was also somewhat displaced, its apex striking the chest-wall 3 inches below the nipple. Loin, spleen, and kidneys, normal. Larynx: The inner surface of the larynx was ulcerated throughout. The epiglottis was almost destroyed, and greatly thickened by infiltration of lymph. The vocal cords, true and false, were much thickened and infiltrated. Thyroid cartilage partially ossified.

CASE 7.

J. E.; aged 30; nativity, England; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., July 18, 1885; died March 27, 1886.

When admitted he presented the usual rational and physical signs of tuberculosis in an advanced stage.

Autopsy.—This was made six hours after death. External appearance: Skin pale and yellow, and entire body greatly emaciated; the abdomen was somewhat distended, and fecal matter had escaped from the rectum; *rigor mortis* slight in upper extremities, but well marked in lower limbs. Thorax was opened and heart first examined. This organ was small, pale, and flabby, and contained in the right chambers clots of coagulated blood and lymph. Valves normal; coronary arteries presented large orifices. Lungs: Both lungs were smaller than normal, emphysematous, and were nodular. The left lung was closely adherent to the pleura, and showed posteriorly slight hypostatic congestion. The upper lobe contained a large cavity filled with pus; the lower lobe was emphysematous, and presented on section numerous pus cavities distributed throughout its substance. The condition of the right lung

indicated that the disease first invaded its substance, as it was found in a much more advanced stage of disorganization. Almost the entire upper lobe showed on section a large irregular cavity filled with pus; the middle lobe was studded with miliary tubercles and small pus cavities; the lower lobe was congested, and presented but few tubercles.

The diaphragm was firmly adherent to the pleuræ; the stomach and intestines distended with gas; liver normal; kidneys pale and enlarged; capsule adherent; spleen very small, and not more than two-thirds the size of either kidney.

CASE 8.

W. F.; aged 22 years; nativity, Kentucky; admitted to Marine Hospital, New Orleans, La., January 5, 1886; died May 25.

Autopsy (eight hours after death).—Body small; very much emaciated. Heart atrophied; valves soft. Upper lobe left lung occupied by cavity size of an orange; in middle lobe right lung there was also a cavity; remainder of right lung infiltrated with tubercle. Liver and kidneys cirrhotic. Brain not examined. Other organs normal, except intestines, which were atrophied and their lumen contracted.

CASE 9.

Intussusception of Jejunum.

I. M.; aged 25; nativity, Kentucky; admitted to Marine Hospital, New Orleans, La., February 15, 1886; died April 3.

History.—When admitted patient was far advanced with tuberculosis; very much emaciated. He gradually grew worse, and died April 3.

Autopsy.—Pericardial sac contained about 100 C. C. of serous fluid. Heart normal. Upper lobe of right lung adherent, and containing an abscess cavity about the size of a small orange, and filled with pus. Rest of lung infiltrated with tubercle. Left lung: Upper part also bound by pleural adhesions; entire upper lobe occupied by an abscess cavity. Each pleural cavity contained about 15 C. C. of serum. Bronchial glands enlarged and cheesy. Liver normal. There was an intussusception of the jejunum, in extent about two inches. It probably took place during the death agony, as there was no pathological change in the portion of intestine involved. Mesenteric glands enlarged. Spleen normal. Stomach filled with dark-colored fluid. Kidneys normal. Peritoneal cavity contained about 150 C. C. of serous fluid. Bladder slightly distended with urine; its mucous membrane was healthy.

CASE 10.

W. K.; aged 33 years; nativity, Ohio; admitted to Marine Hospital, New Orleans, La., March 5, 1886; died March 17.

Autopsy (nine hours after death).—Body medium size; emaciated; œdematous. Right pleura adherent; left pleura free. Pericardial sac contained about 75 C. C. serous fluid. Heart normal, its valves soft and flabby. Upper lobe of left lung contained a cavity about the size of an average fist. Lower lobe of same lung also contained cavity. The remainder of lung infiltrated with tubercle. Upper and posterior portion of right lung infiltrated with tubercle. Liver in advanced stage of fatty degeneration. Kidneys large, pale, and waxy.

CASE 11.

E. H. (negro); aged 24 years; nativity, Mississippi; admitted to the marine ward City Hospital, Evansville, Ind., January 28; died February 20.

History.—Cough of a year's duration. Examination shows both lungs seriously impaired. Cavernous respiration over large portion of left lung, with cracked-metal resonance on percussion over upper lobe.

Autopsy.—Body greatly emaciated. Right lung: Lower lobe filled with tubercles; small pus cavities through whole lung. Cavity at apex of left lung 6 centimetres in diameter, filled with thick pus; in lower lobe was a cavity 4 centimetres in diameter. This whole lung was riddled with pus cavities. Heart normal; weight 275 grammes. Kidneys normal; right weighed 165 grammes; left, 150 grammes. Spleen normal. Bronchial glands greatly enlarged; some cheesy.

CASE 12.

A. K.; aged 25; nativity, Canada; admitted to Marine Hospital, Saint Louis, Mo., July 20, 1885; died February 19, 1886.

History.—Consumption in the family. Usual history of phthisis, with laryngeal complication; voice almost inaudible for some time preceding death.

Autopsy.—Body much emaciated; *rigor mortis* well marked. Lungs, both filled with tubercular deposits and honey-combed with cavities from the size of a pea to that of a walnut. Heart normal. Larynx, entire inner surface uniformly thickened and resembling the surface of a cauliflower. A small ulcer found in the right ary-eno-epiglottidean fold. Pleura slightly adherent at apices. Other organs not examined.

CASE 13.

C. R.; aged 20; nativity, Iowa; admitted to Marine Hospital, Saint Louis, Mo., August 22, 1885; died February 20, 1886.

History.—That usual in phthisis; laryngeal symptoms prominent.

Autopsy.—Body wasted. Lungs, both filled with tubercular deposits and abscesses of various sizes. Pleura, two surfaces slightly adherent. Heart normal. Larynx, a ragged ulcer about 1.4 centimetres in diameter and .6 centimetres deep found at the base of each arytenoid cartilage. Other organs not examined.

CASE 14.

D. H.; 45 years old; born in Tennessee; admitted to Marine Hospital, Louisville, Ky., February 10, 1886, with advanced phthisis. Had cavities in both lungs at apex, greater in degree in the right. Been sick one year. Disease, during stay in the hospital, progressed to the larynx, and later to the pharynx, entailing great suffering, for which treatment did little good, even in the way of palliation. Died April 14, 1886.

Autopsy (*eight hours after death*).—Emaciation excessive. *Rigor mortis* marked. Body of pale, waxy look. Right lung externally mottled, rough, and bound at apex to thoracic wall. Ruptured in removing, from which ran a dark, thin fluid, mixed with lumps of caseous matter of various sizes and of various degrees of consistency. Cavity the size of an orange. Lower lobes filled with hard cheesy masses. Left lung in same condition, except that there were no adhesions, and the cavity was

somewhat smaller than that in the right. Liver of pale-yellowish hue, greatly enlarged, especially left lobe, and seat of extreme fatty deposit.

Spleen of light-gray hue externally, dark violet within. Greatly shrunken, and of soft, pulpy consistence.

Kidneys below normal size. Naked-eye appearances normal.

Stomach one-third the usual size. Nothing unusual about other organs.

CASE 15.

C. J.; aged 24; nativity, Germany; transferred from Pensacola, Fla., to Marine Hospital, Mobile, Ala., April 1, 1886; died May 2. Acting Assistant Surgeon R. B. S. Hargis reported that this patient was "admitted to Pensacola Hospital February 13, 1886, suffering from chronic bronchitis. He steadily improved until about March 8, when he had a chill, followed by fever. A few days afterwards physical signs of consolidation of upper lobe of left lung were discovered, which, in spite of treatment, commenced breaking down, and a well-marked inflammatory condition was developed."

On admission to Marine Hospital, Mobile, patient was very much prostrated and emaciated. Entire left lung in active inflammatory condition. Marked dullness of right lung. An exaltation of temperature (38° to 40° C.), weak, rapid pulse (110 to 130), and colliquative diarrhœa persisted throughout the disease.

Autopsy.—Body emaciated. Left lung completely destroyed, a few shreds of bronchial tissue and sanguino-purulent pus only being found in left pleural cavity. Right lung studded with yellow tubercular abscesses from 1 to 4 centimetres in diameter. Heart enlarged, fatty, and engorged. Omentum thickened and inflamed. Mesenteric glands the size of filberts and full of yellow tubercular pus. Intestines agglutinated. Liver, spleen, pancreas, and kidneys normal.

CASE 16.

J. P.; aged 27; nativity, Norway; transferred from Jacksonville, Fla., to Marine Hospital, Mobile, Ala., December 23, 1885; died May 24, 1886.

Autopsy.—Rigor mortis. Body thoroughly emaciated. Both lungs almost solid from tubercular infiltration. Left lung firmly adherent to chest walls and pericardium. Mesenteric glands also affected with tubercular deposits. All other organs normal.

CASE 17.

M. J. L.; aged 32; nativity, Ireland; transferred from Pensacola, Fla., to Marine Hospital, Mobile, Ala., October 4, 1885; died May 8, 1886.

Autopsy.—Rigor mortis. Body thoroughly emaciated. Both lungs permeated with gray tubercle and small pus cavities. Entire right lung and upper lobe of left lung so firmly adherent to chest walls that separation could only be accomplished by dissection. Mesenteric glands enlarged and infiltrated with tubercle. Heart, liver, spleen, kidneys, and alimentary canal normal.

CASE 18.

J. D. (negro); aged 32; nativity, American; transferred from Pensacola, Fla., to Marine Hospital, Mobile, Ala., May 5, 1886; died May 21.

Autopsy.—Rigor mortis not developed. Body emaciated. Both lungs studded with hard tubercular masses; no cavities; no pleuritic adhesions. All other organs of thorax and abdomen healthy.

CASE 19.

H. M.; aged 27 years; nativity, Norway; admitted to the Marine Hospital, Boston, Mass, June 8, 1885; died August 22.

Patient had suffered from cough about three years, but was able to "go before the mast" until the date of his admission to the hospital. Physical examination revealed a large cavity in the upper lobe of left lung, the amphoric sound audible 3 inches from the chest walls. The upper lobe of the right lung was flat on percussion. Rapid respiration, high evening temperature, profuse night sweats, and incessant cough marked the rapid progress of the disease to the termination.

Autopsy.—Rigor mortis. Body emaciated. Meteorism and bulging of chest walls on left side. Left lung entirely broken down and pleura filled with purulent fluid. The pleura of the left lung was perforated in several places, causing hydropneumothorax. The right lung was infiltrated with tubercle throughout. Pericardium contained 100 C. C. serum. Heart contracted. Kidneys congested. Tubercle only found in the lungs. Brain not examined.

CASE 20.

H. S.; aged 25; native of Kentucky; admitted to Marine Hospital, Louville, Ky., November 10, 1885, with advanced tuberculous disease of the lung. Disease involved both lungs, the left to the greater extent. Was well up to four months past, according to his own report. Had hæmoptysis the day before and the morning after admission. Disease progressive, treatment palliative. Death occurred February 5, 1886.

Autopsy.—Rigor mortis marked. Emaciation great. No unusual appearances found on opening the thorax. Left lung adherent to chest wall throughout. Pleuræ much thickened, and hard to separate from both chest wall and lung. Lower lobe of latter firm and resistant to touch, and upon section found to be studded with masses of cheesy matter of small size, and for the most part of sufficient consistence to bear section with the knife. Upper lobe contained a large cavity near the apex, with collapsed walls, the latter plastered over with soft sanguino-purulent matter, only a small quantity of which had collected in the cavity itself. Right lung diseased throughout, presenting the same appearances as the lower lobe of the left. Heart normal in all respects. Other organs not examined.

NOTE.—The subject of this autopsy helped to bear out a sign heretofore noticed, that those with wide-spread pulmonary lesion always talk with reluctance.

J. G.

CASE 21.

J. E. McD.; aged 25; a native of Nova Scotia; admitted to Marine Hospital, Wilmington, N. C., February 11, 1886.

History—While in Baltimore one year ago he took a severe cold. This was followed by a dry, hacking cough, which was not distressing. February 11, 1886, he had a severe hemorrhage. It was for this he was admitted. When admitted the normal vesicular respiratory sounds were diminished. There were no râles except in a small circumscribed area over left lung. Here were a few moist râles. These were above

the nipple and to the left of the mamillary line. These râles disappeared in twenty-four hours. He had eight or ten hemorrhages, with intervals of twelve to forty-eight hours. He had none during the ten days preceding his death. During the day the cough did not annoy him. When he lay down at night the cough was very annoying. During the last ten days of his life he had to sleep sitting erect in his chair. Expectoration was always scanty and viscid. Voice husky. Throat ulcerated. He died March 21, at 9.45 A. M.

Autopsy.—Intestines normal. Mesenteric glands greatly enlarged. Liver congested, otherwise normal. Kidneys normal. Left side of heart normal. Right side of heart dilated. Pulmonary valves inefficient and artery dilated. Both lungs filled with tubercles. There was a large number of gray tubercles beneath the mucous membrane of the trachea. Tracheal mucous membrane congested. At apex of left lung was a large mass of cheesy material, size of a small orange. This mass was encysted, but a part of it had evidently broken down and escaped from the cyst through a small opening in the cyst wall. The cyst wall was made up of lung tissue and fibrous tissue, and was 5 centimetres in thickness.

Weight of organs.—Liver, 2,030 grammes; spleen, 335 grammes; right kidney, 225 grammes; left, 230 grammes; heart, 413 grammes; right lung, 1,082 grammes; left, 1,027 grammes.

CASE 22.

Larynx involved.—Cerebral Apoplexy.

G. T.; aged 30 years; nativity, Greece; admitted to Marine Hospital, San Francisco, Cal., January 21, 1886; died February 9.

Autopsy (eighteen hours after death).—Body much emaciated. *Rigor mortis* marked. Brain: Calvarium removed. Dura mater congested and adherent along each side of the superior longitudinal sinus and at the base. At these points were evidences of inflammation, consisting of œdema and fibrinous exudations. Some miliary granulations (tubercles?) were also found at those points. Small quantity of clear fluid in subarachnoid space. Pia mater much injected and softened. Brain substance generally softened and anæmic; especially was this the case in the right lobe. Two small hemorrhagic infarcts were found in the white, just beneath the gray substance of the left lobe, just opposite the upper end of the fissure of Rolando, which were evidently the cause of the involuntary movements of the right arm and leg (swimming movements, Ferrier) for three days previous to death. Lungs: Left pleural cavity filled with clear fluid and the lungs compressed to size of right lower lobe. Pleura much thickened and of the consistence of leather. Adhesions were many and very strong and tough. Remnant of lung was filled with numerous tubercular masses, and contained many small cavities filled with débris of lung tissue. Remnants of left lung and heart were fused together into an almost inseparable mass. Right pleura nearly normal in appearance. Adhesions few and weak; no fluid. Lung did not collapse when removed. Two small cavities in apex. Bronchi and cavities filled with semi-fluid débris. Miliary tubercles generally disseminated throughout the lung; upper lobe in a state of gray hepatization; middle and lower lobes in a state of red hepatization. Emphysematus (interlobular) patches on surface of lung, especially of upper lobe. Tracheal and bronchial glands were much enlarged and discolored. Larynx: Only remnants of the vocal cords

could be detected, and there were several small ulcers on the posterior inner surface of the larynx. Heart not more than one-third normal size. Pericardium universally and intimately adherent. Walls of ventricles had undergone fatty degeneration, and were so thin that the slightest force ruptured them; in fact, the force used in removing the pericardium tore them so that no satisfactory examination of the valves could be made. Liver fatty.

NOTE.—This was but a usual case of phthisis pulmonalis, barring the involvement of the larynx, the only point of unusual interest lying in the sequelæ as mentioned in the *post mortem* history, viz, the brain lesions. Three days previous to death he suddenly became comatose, from which condition it was impossible to rouse him. Simultaneously with the coma began movements, regular and persistent, of the right arm and leg, described by Ferrier as "swimming movements," which persisted to within a short time previous to death; the opposite extremities meanwhile lying motionless and relaxed wherever placed. Coma was unaccompanied by stertorous breathing.—H. W. S.

CASE 23.

Atheroma.

J. K.; aged 57 years; nativity, New York; admitted to Marine Hospital, San Francisco, Cal., April 21, 1886; died June 18.

Autopsy (*sixteen hours after death*).—*Rigor mortis* marked. Body emaciated to an extreme degree. Entire surface very pale and bloodless. Many of the arteries, notably the radial and temporal, presented calcareous degeneration, and were in the well-known "pipe-stem" condition. Muscles slight and anæmic; no oozing from their cut surfaces. Abdominal contents were much paler than usual and the omentum contained almost no fat. Near termination of ileum were found two darkly pigmented, somewhat thickened portions of the intestinal walls, about the size of a silver quarter. These thickened portions were opposite the mesentery, and contained several light-colored nodules the size of a grain of wheat. The cartilages of the ribs were almost completely ossified. Upon removing sternum, lungs did not collapse. Their surfaces very pale and more mottled than usual. They were filled with nodular masses, and pressure caused pitting. Numerous strong adhesions at apex and to diaphragm of both lungs. Peritoneal cavity contained considerable fluid. Small quantity of fluid in each pleural cavity. Pericardial sac contained about 100 C. C. of clear straw-colored fluid. Heart vessels much engorged. Right auricle contained a small quantity of dark fluid blood; also contained a very large fibrinous clot. Cut surface walls of right ventricle anæmic, soft, and easily torn. Left ventricle red, soft, and easily torn; normal thickness. Large *ante-mortem* clot in aorta, which extended some 20 centimetres on the right side into two large branches on the left side, abruptly terminated about 2 centimetres beyond the carotid artery. Right pulmonary artery contained a clot about 8 centimetres long. Left pulmonary artery contained a clot about 3 centimetres long. Aorta about 3.5 centimetres in diameter. Walls thickened, rough, and calcareous just above aortic valves. Pulmonary valves very much thinned, but sufficient. Walls of artery thin. Inner coat normal, but very pale. Clot in right heart extended from the auricle into the ventricle and pulmonary artery. Aortic valves thickened and calcareous. Clot extended from left auricle into ventricle and aorta. Mitral valves thickened, in places atheromatous, apparently sufficient. Tricuspid valves very thin, otherwise normal. Lungs decidedly adherent posteriorly. Right lung: Cavity in apex size of a lemon; walls, thick and strong, filled with broken-down tissue. Upper lobe solidi-

fied, mottled gray in color, and œdematous; middle lobe same condition, only less solid; lower lobe of a mottled red color, consolidated and œdematous; edges of middle and lower lobe were apparently the only pervious portions. Lung infiltrated throughout with tubercular deposits. No other cavities. Left lung about two-thirds size of right lung. Entire apex occupied by a large irregular cavity, with strong resisting walls filled with broken-down tissue of fluid consistency. The pleura over apex 0.5 centimetre thick, resembling leather. Interlobular emphysema of lower lobe; many smaller cavities throughout the lung; some of these contained semi-fluid contents, others caseous deposits. Left lung: Portions of upper lobe not occupied by cavity were completely solid. Lower lobe solidified and œdematous. Many of the bronchial glands were enlarged and discolored. Spleen decidedly adherent to diaphragm and stomach, about twice the normal size, of a light brownish red color, and very soft. Left kidney about normal size, very flabby; cortex normal in thickness, very pale and dull, many of the pyramids much congested. Capsule easily detached; leaves a smooth surface. Cortex of left kidney normal in thickness, somewhat pale; pyramids pale. In the cortical substance was found a cavity with a smooth lining, which contained about 5 C. C. of clear fluid. Capsule easily detached, and leaves a smooth surface. Liver somewhat enlarged, very soft and fatty. Stomach much dilated; lining membrane smooth and pale, covered with slimy mucus. Intestines considerably distended with gas and a small quantity of fecal matter. Arteries of upper extremity generally dilated, walls thickened and rough, and covered with many atheromatous patches and calcareous plates.

CASE 24.

L. H.; aged 21 years; nativity, Norway; admitted to Marine Hospital, San Francisco, Cal., December 16, 1885; died June 2, 1886.

Autopsy (twenty-four hours after death).—Rigor mortis well marked. Body extremely emaciated. Abdomen: Intestines distended. Small quantity of clear fluid in peritoneal cavity. A few enlarged and discolored mesenteric glands. Liver much enlarged; color yellowish brown; consistency softer than normal and decidedly fatty. Thorax: Apex of right lung attached to chest walls by easily torn adhesions. No fluid of consequence in pleural cavity. Left lung universally attached by fully organized adhesions, obliterating entirely the pleural cavity. Extensive interlobular emphysema of surface of right lung. Heart: Pericardium contained about 25 C. C. of clear reddish fluid. Over aortic and pulmonary arteries the pericardium was much congested, otherwise normal. Heart soft, flabby, and anæmic; cut surfaces pale and soft; but small quantity of blood in its cavities. Small partly organized clot in each side. Lungs: Apex of right lung contained a cavity the size of a large walnut filled with pus and detritus. Upper lobe generally infiltrated with tuberculous deposits. It also contained many small cavities in addition to the large one mentioned. Middle lobe solidified and dark red in color. It and the lower lobe were also thickly strewn with tubercle. Lower lobe decidedly œdematous and emphysematous (vesicular). In the apex of the left lung was also a cavity the size of a large orange partly filled with detritus. Its walls were very firm and did not collapse when incised. The lung throughout was totally disorganized and impervious. Many smaller cavities were found in all parts of the lung. It was, in short, but one mass of tubercle. Many of the bronchial glands were enlarged and discolored. Spleen about normal in size, very

dark colored; on section very soft and pulpy. Kidneys normal in size. Capsules easily detached, leaving a smooth surface. Cortices pale; many of the pyramids much congested, others pale.

CASE 25.

H. S.; aged 36 years; nativity, Finland; admitted to Marine Hospital, San Francisco, Cal., February 10, 1886; died February 16.

Autopsy (*sixteen hours after death*).—*Rigor mortis* well marked. Body tolerably well nourished; some bulging forward of fourth and fifth costal cartilage, left side, evidently of long standing. Just above cartilage of seventh rib, left side a small abscess, probably pyæmic, was found, not extending to pleura beneath. Chest: Both pleural sacs obliterated throughout by adhesion of visceral and parietal layers; consequently no fluid in either cavity, yet there was no perceptible thickening, except at apex of right lung, where the matted layers had assumed thickness and consistency of leather, and were firmly adherent to an induration of lung some 0.5 centimetre in thickness. Left lung presented a condition of extensive engorgement, the lower lobe showing also the red hepatization of pneumonia. Miliary granulations were thickly disseminated throughout this lung. At some points small aggregation, of tubercle had undergone a cheesy or calcareous change, and at the apex there were several small and one considerable cavity, the latter being full of a dark thick fluid. Right lung was likewise thickly studded with tubercular granulations and small nodules. In the upper lobe, besides a condition of gray hepatization, was found an extensive cavity, running from the apex downwards and forwards some 12 centimetres long and 3 centimetres in diameter. This was nearly empty. The middle lobe was less damaged. This, and more especially the lower lobe, besides tubercles and areas of gray hepitization, showed quite extensive interlobular emphysema. Several bronchial and mediastinal glands were enlarged and discolored. Heart: Pericardium little more fluid than normal. Heart flabby, fatty; a large fibrinous clot filled right auricle, extending into ventricles and also into pulmonary artery. Both aorta and pulmonary artery seemed dilated, especially the latter. All the valves were sufficient; those of pulmonary orifice very thin. Liver somewhat enlarged and fatty. Gall-bladder distended and some pigmentation of intestines contiguous thereto. Kidneys somewhat engorged, otherwise about normal.

CASE 26.

J. A.; aged 36 years; nativity, Norway; admitted to Marine Hospital, San Francisco, Cal., February 5, 1886; died April 7.

Autopsy.—On account of the advanced state of decomposition of the body, the larynx only was examined, in the internal portion of which was found irregularly diffused patches of tubercle and excavated tubercular ulcers of sizes varying from that of a millet seed to a split pea. These were especially numerous about the vocal cords and the thyro epiglottic ligament. Many of the ulcers had become confluent, causing extensive erosions with loss of tissue, the ulceration in many cases extending down to and including the cartilages; this was more marked about the attachment of the epiglottis. The thyro epiglottic ligament was almost entirely destroyed, and of the vocal cords only irregular remnants were left. The laryngi ventriculi were nearly obliterated. No perforation was detected.

CASE 27.

R. R.; aged 52 years; nativity, Scotland; admitted to Marine Hospital, San Francisco, Cal., January 28, 1886; died February 2.

Autopsy (fourteen hours after death).—Some *rigor mortis.* Body considerably emaciated. Lungs emphysematous, especially the lower lobes. Small quantity semi-purulent fluid in the left pleural cavity, none in the right. Strong pleural adhesions on the left side, a few weak ones on the right. Both lungs in a state of red hepatization. Small tubercular deposits (miliary) generally disseminated throughout both lungsl A few calcified (ancient) tubercular deposits were also found. Smal. cavities in both apices, which were filled with detritus. Bronchi and vesicles filled with purulent fluid. Small *ante-mortem* clots in both ventricles. Walls of left ventricle considerably thickened, and in a state of fatty degeneration. Mitral valves thickened and somewhat insufficient; other valves in good condition.

CASE 28.

C. M.; aged 23 years; nativity, Sweden; admitted to Marine Hospital, San Francisco, Cal., March 6, 1886; died April 2.

Autopsy (eight hours after death).—Rigor mortis marked; extreme emaciation. Pericardium contained 75 C. C. or more straw-colored serum. The membrane was anæmic; no sign of inflammation; no adhesions. Heart fatty, anæmic; its vessels degenerate, and its pericardial covering œdematous. Right pleura anæmic, otherwise normal, below. Over apex, and almost whole of upper lobe of the right lung, the pleural layers were connected by numerous organized bands. Right lung presented over its entire surface numerous patches of interlobular emphysema, and many casified lobules, from atalectasis in the distribution of the smaller bronchial divisions. Almost all the lung tissue, not thus affected, was the seat of tubercular nodules, abscesses,and purulent infiltration. The upper lobe at apex presented cavities from the size of a hazel-nut to that of a walnut, and the middle and lower lobes were full of small cavities. Left lung was absolutely destroyed. No remnant of it could be found but what appeared to be the anterior portion of upper lobe, and this was a mere mass of broken-down tubercle, full of small abscesses. The upper and posterior portion of upper lobe was entirely gone, and the cavity thus formed was continuous with the cavity of the pleura and the great hollow left by destruction of the lower lobe. The whole pleura was much thickened, and presented a ragged, shredded surface, and was covered with a creamy or cheesy pus. The great cavity alluded to above was about half full of creamy, not fetid, pus. In view of the condition of the lungs it is not apparent how life was sustained so long as it was. Abdomen: Peritoneum and intestines, omentum and mesentery, very anæmic. In omentum and cellular tissue everywhere more or less œdema. Peritoneal cavity moderately full of clear straw-colored serum. Liver and spleen slightly congested; more marked in the liver, and chiefly hypostatic. Kidneys and other organs normal. Nowhere but in the lungs was any trace of tubercle found.

CASE 29.

Hypertrophy of Liver. Ascites.

D. L.; born in New York; aged 36 years; admitted to Marine Hospital, Portland, Me., October 28, 1884; died May 15, 1886.

History.—This patient was transferred from Bangor, Me., where he had been under treatment for some months. About one year after ad-

mission a tumor in the right hypochondriac gradually encroaching on the epigastric and umbilical regions became apparent. The most careful treatment and diet only seemed to postpone the final issue. During the last two months the abdomen was tapped twice to relieve dyspnœa, and 22,000 C. C. of a highly albuminous fluid withdrawn. Erysipelas, facial, appeared some weeks before his death, but yielded promptly to fluid extract of jaborandi, and had almost disappeared at time of death.

Autopsy (thirty-six hours after death).—Abdomen contained 2,000 C. C. flocculent serum, and showed traces of a high grade of inflammation. Liver, ascending and transverse colon, and omentum glued to abdominal walls. Liver enlarged, brown in color, weighing 4,300 grammes, section showing no abscess or cyst. Pericardium contained 60 C. C. of serous fluid. Extensive cavities in both lungs, more particularly in the right. Heart apparently normal.

CASE 30.

D. S.; born in Virginia; aged 29 years; admitted to Marine Hospital, Portland, Me., August 10, 1885; died, February 14, 1886.

History.—This case presented no features of special interest beyond a slight roughness of respiratory murmur. Patient seemed on admission in excellent physical condition, except for this murmur. Cod-liver oil, hypophosphites, whisky, quinine, and diet of the most nourishing quality were unsparingly used. He sank gradually.

Autopsy (ten hours after death).—Body that of a muscular young man extremely emaciated. *Rigor mortis* well marked. Abdomen: Omentum, kidneys, and viscera generally matted together by bands of lymph. Kidneys congested, and showing fatty degeneration. Thorax: Pleural cavity obliterated; right lung almost solidified; left lung almost obliterated. Heart somewhat fatty, thinned; *ante-mortem* clots in right side. Valves normal.

CASE 31.

Enteritis.

H. M.; born in Ireland; aged 22 years; admitted to Marine Hospital, Portland, Me., January 5, 1886; died April 12.

History.—This patient's health had failed gradually for some months, reducing his weight from 92.5 kilogrammes to about 55 kilogrammes within the preceding year. He complained on admission of great pain in abdomen, loss of appetite, and general malaise. Bowels irregular. Temperature 38° C. Respiration hurried. Tonics, stimulants, cod-liver oil, syrup of iodide of iron, milk, beef-tea, and generous diet were given ineffectually.

Autopsy (ten hours after death).—Body that of a muscular young man extremely emaciated. *Rigor mortis* absent. Abdominal organs smaller than usual and all notably devoid of fat; omentum especially so. Small intestines studded with tubercular ulcerations, many of them perforating its walls. Liver showing points of tubercular deposit. Thorax: Slight pleural adhesions; lungs adherent to diaphragm. Right lung somewhat emphysematous, showing minute points of yellow tubercular deposit. Left lung exhibiting calcareous degeneration of bronchial glands. Heart normal.

CASE 32.

Old Fracture of Femur.—Open Foramen Ovale.

M. S.; aged 48; native of Kentucky; negro; was admitted to the Marine Hospital, Memphis, Tenn., November 23, 1885. He stated he was

compelled to abandon his vocation two months previous to admission on account of an increasing weakness and associated cough and night-sweat. Examination revealed diminished respiratory area in right lung, and a cavity in apex of left lung. Thick, viscid, yellow sputa. Appetite poor. Patient very weak.

The process of breaking down of tuberculous deposit and suppuration was very rapid. Treatment tonic and dietetic, but without beneficial effect, the patient dying December 24, 1885.

[Patient stated he was shot October 1, 1883; bullet from .44-caliber revolver. Ball entered the middle and outer surface of the thigh, passed obliquely upward, fracturing the femur, and lodged in the inner part of thigh. The physician who was called to see the case placed the thigh in a plaster-of-paris bandage, removing the dressing, however, some days later. As patient was too poor to pay for professional services, and, like most negroes, preferred to remain at home instead of going to a hospital, the femur united very much as it pleased. When examined it was found that a spicula of bone had been chipped off the inner surface of femur and was embraced in the reparative callous formation; a small piece of lead from the bullet was retained in like manner. The reason for noting these facts is that there must have been very little tendency to suppuration, or the spicula and lead would have been discharged through the wound. The bullet flattened to the diameter of a 20-cent piece, and retaining the marks of the point of impact, was found encysted on the inner side of the femur a few centimetres above the callus.]

Autopsy (twelve hours post mortem).—Rigor mortis not yet developed. Body greatly emaciated. Shortening of left leg from an obliquely united fracture of the femur.

Thoracic cavity: The apex of the right lung was adherent anteriorly and posteriorly by old pleuritic adhesions. The pulmonary parenchyma was discolored by carbon deposit. On the anterior surface of the upper lobe there was a linear cicatrix an inch in length. The upper lobe of lung was filled with tubercles in various stages of degeneration. Tubercles were not as numerous in the middle lobe, and less numerous in the lower lobe; in neither of these lobes was there much breaking down of tubercles. Lung weighed 580 grammes.

The upper lobe of the left lung was closely adherent to the adjacent costal pleura; in removal the lung was torn. The entire lobe was broken down, a mere shell of tissue remaining to inclose the cavity. The lower lobe was filled with tubercles; weight 764 grammes.

The heart was contracted, all valves normal, except the valve closing the foramen ovale, in the upper and internal border of which was an ununited opening about the caliber of a goose-quill. [This is the second time the reporter has found this patency; also in a negro. *Vide* p. 158 Annual Report of the Surgeon-General United States Marine-Hospital Service, 1885.] Weight 219 grammes.

Abdominal cavity: Liver dark-colored, firm, no evidence of tubercle or fatty degeneration; weight 1,305 grammes. Pancreas normal; weight 90 grammes. Spleen presented evidences of former inflammation and enlargement by an irregular thickening and opacity of the anterior surface of the capsule; weight 129 grammes. Right kidney normal; weight 123 grammes. Left kidney normal, weight 179 grammes. Right supra renal capsule was of firmer texture than usual; weight 5 grammes. Left suprarenal capsule similar; weight 11 grammes. Notwithstanding the disparity in the weight of the kidneys and of the supra-rena capsule of either side, no evidence of disease was discernible.

CASE 33.

Chronic Bronchitis.

A. D. L.; aged 52; nativity, North Carolina; admitted to Marine Hospital, Wilmington, N. C., December 29, 1885.

History.—Patient said he had a diarrhœa amounting to seven or eight stools daily. He was put to bed and ordered to use the bed-pan; had no operation for two days. He had been treated at the office for cough many times during the year previous to his admission. He had chronic bronchitis. He was emaciated and weak. There were râles in his chest, but no dullness on percussion. He was repeatedly examined. January 29, 1886, dullness was detected, and the diagnosis was changed to yellow tubercle. He failed rapidly, and died February 3, 1886.

Autopsy.—Right lung was undergoing rapid disintegration; few tubercles in left; other organs healthy, except spleen was chronically enlarged. Weight of organs: Liver 2,250 grammes; right kidney 165 grammes, left 165 grammes; heart 285 grammes; spleen 455 grammes; left lung 684 grammes, right 454 grammes.

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SCROFULA.

Tubercle.

H. M.; aged 57 years; nativity, New York; admitted to marine ward, Saint Joseph's Hospital, Baltimore, Md., August 3, 1885, suffering from severe gastric symptoms, indicative of obstinate dyspepsia, and such a diagnosis was made. The previous health of the patient had been very bad. He stated that several months previously, while in Brazil, he contracted a severe type of fever; his abdomen swelled enormously; pains severe in character radiated in the right side in region of the liver, also towards the umbilicus. He finally recovered his health sufficiently to return to his native State, but had ever since suffered from dyspepsia, and had been treated by various physicians for this disease.

Keeping the patient constantly under observation for several days developed the fact that the dyspepsia was only a symptom of a severer ailment. He suffered from anorexia; paroxysmal pains all over the abdomen, but chiefly at umbilicus and right hypochondriac region. Irregularity of the bowels; often constipated; sometimes diarrhœa made its appearance. Emaciation was constant and progressive. A cough finally developed, which was, however, very variable in character. The expectorated matter differed at times both in color, quantity, and consistency, but at no time pointing to any serious involvement of the lungs; other means of diagnosis showed the involvement of the lungs to be slight. Finally the patient was discharged and readmitted on a new permit, with the diagnosis of scrofula with phthisis. The emaciation became extreme; the griping in the abdomen more constant and severe. The patient began to complain of a constant boring headache, which was finally followed by delirium, in which state the patient lingered three days, dying November 25, 1885.

Autopsy (*thirteen hours after death*). — *Rigor mortis* well developed. Thoracic cavity: Lungs contained tubercle, but were moderately well preserved. Heart normal. Abdominal cavity: Peritoneum and abdominal lymphatic glands densely studded with miliary tubercle. The

transverse colon dotted with gray granulations. The large and small intestines alike were thoroughly dotted with these small masses, the ileum markedly so. The liver was adherent to the diaphragm, and in effecting its removal a great part of its capsule, studded with tubercle, was torn off. Kidneys normal; the spleen much shrunken and very pale.

CASE 2.

H. J. (colored); aged 24; nativity, Nova Scotia; admitted to Marine Hospital, Wilmington, N. C., March 19, 1885. He was transferred from Norfolk, Va.

History.—Always enjoyed good health till the present disease attacked him, about six months previous to his admission. When admitted his neck was greatly enlarged. All of the glands on the right side were inflamed. Some were suppurating, some were just beginning to grow, while large scars marked the places where glands had formerly been. Various remedies were tried, but Lugol's solution of iodine was the only one that benefited the glandular enlargements. Two months before his death all of the glands of the neck had either undergone resolution or discharge by suppuration. Before the glandular swelling had wholly disappeared a soft cough appeared. It did not annoy him very much. When asked in the morning how he felt he invariably replied "Better." His fortitude was remarkable. His decline from the outset was constant but slow.

Autopsy.—Body that of a negro, 1.6 metres tall, much emaciated. Tissues below knee œdematous. On the right side in supraclavicular space was a cavity which would contain 40 C. C. of fluid. Sternal end of left clavicle carious and bare.

Very little subcutaneous fat. Intestines nearly empty and normal. They were covered in many places with a transparent gelatinous substance. In right iliac fossa behind the peritoneum was a large cavity containing .5 litre of pus. This cavity did not communicate with the vertebræ, but arose apparently from lymphatic glands near the fourth and fifth lumbar vertebræ.

Right lung in good condition. Left lobe was wholly gone. Between the lower and upper lobe was the upper limit of a cavity containing 600 C. C. of pus. Heart in systole; valves normal. Kidneys normal.

Weight of organs: Liver, 1,320 grammes; spleen, 230 grammes; right lung, 870 grammes; left, 710 grammes; heart, 240 grammes; left kidney, 160 grammes; right, 156 grammes.

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INFLAMMATION OF THE BRAIN AND ITS MEMBRANES.

A. S.; aged 41; nativity, England; admitted to Marine Hospital, Mobile, Ala., June 29, 1886, and died June 30.

S. was an unacclimated Englishman, having arrived in Mobile in the fall of 1885.

He was brought to hospital at 7.30 A. M., and in the act of removing him from the hack he was seized with convulsions, of which he had several. Upon his removal to a ward he was found to be insensible to all external influences, pupils contracted to less than pin-head size, insensible to scratching the sclerotica with finger nail, face haggard, and jaws firmly set, so firmly in fact that it was impossible to administer any-

thing per orem, and he was laboring under an acute delirium, requiring two or three men to keep him in bed. He was given hypodermically morphia .01 and atropia .002. This soon quieted him. His temperature then was 39.5° C. in the axilla, and pulse 144 and weak; respiration hurried. He voided his urine involuntarily at this moment. Recognizing that the patient was suffering from an acute inflammation of the brain, I removed him to a cooler private room and applied ice-bags to the back of the head, and towels wrung out in ice-water completely covering the head and changed every fifteen minutes. As the patient had been ill for three or four days prior to admission with fever, which, from the best information I could glean from his wife, I believed to be of malarial origin, I gave him an enema of 2 grammes of quinia, and this I repeated every three hours until I had administered 12 grammes, the last three enemas containing also beef tea, milk, and brandy, the ice and ice-water being constantly applied to the head. He died at 7 A. M., twenty-three and one-half hours after admission.

Autopsy.—Rigor mortis absent. Hypostatic congestion of neck along the course of the carotids, probably *post mortem*. Body that of a well-nourished, healthy man. On removing the calvarium the membranes were seen to be highly congested, the meninigeal arteries and veins being distended with red blood. The dura and pia mater were separated from the brain by an unusual quantity of serum. Along the posterior portion of the great longitudinal sinus the pia mater was intimately adherent to the brain, due to the formation of organizable lymph. Removing the membranes, the entire brain was found to be intensely hyperæmic, the course and ramification of the cerebral arteries to the minutest arterioles being sharply displayed, and of an intense scarlet color.

As there was no indication during life of any pathological condition of other organs, the autopsy was limited to the brain only.

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INFLAMMATION OF THE CEREBRAL MEMBRANES.

G. F.; aged 23 years; nativity, Kentucky; colored; admitted to Marine Hospital at Cairo, Ill., March 4, 1886, suffering from diarrhœa and wandering pains in the limbs; senses dull, and intellect clouded; constitutional disturbance slight, and while under observation his temperature did not exceed 38° C.; very restless; does not complain of pain in the head; states that he has been ill for some time, but cannot give an intelligent account of himself. Died March 10, 1886.

Autopsy (*twelve hours after death*).—On removal of the calvarium, the membranes of the brain were found much congested, with extensive deposits of lymph over sulci, and longitudinal and Sylvian fissures united by thick bands of lymph; similar deposits of lymph were found at the base of the brain. Brain substance softened on cortex and separation of pia mater detaches portions of cerebral matter with it. On section puncta vasculosa numerous; lateral ventricles contain much serum, and the walls of the ventricles are softened. Choroid plexus congested. Chest: Left lung shows puckered cicatrices at apex and one or two small masses of calcareous matter; right lung normal; pleural adhesions on both sides, most marked on left. Heart normal in size, valves competent; patches of atheroma in posterior wall of ascending aortæ; pericardium normal, and sac contains the usual quantity of fluid. Abdomen: Liver, stomach, and pancreas healthy; gall-bladder much distended, but contains no calculi; transudation of bile

through coats staining tissues in vicinity. Spleen small in size, firm on section. Right kidney shows slight increase in cortical portions; small calculi of phosphate of lime found at the apex of one pyramid and at the margin of one calyx; pelvis and ureter of this kidney contained a few drops of phosphatic urine. Left kidney shows slight increase in cortical portions. Bladder much contracted, walls thickened, and is the seat of chronic cystitis. Descending colon shows traces of recent inflammation extending into sigmoid flexure and rectum. Ascending and descending portion of colon much disturbed by gas. A constriction 7 inches in length was found in the transverse colon; walls of intestine much thickened, and caliber diminished. Small intestine healthy. Peyer's patches not enlarged. Weight of viscera: Brain, 1,600 grammes; heart, 240 grammes; lungs, 768 grammes; liver, 1,600 grammes; spleen, 112 grammes; pancreas, 70 grammes; right kidney, 240 grammes; left kidney, 240 grammes; supra-renal capsules, 16 grammes each.

CASE 2.

Pneumonia.

H. O. (colored); aged 28 years; nativity, Kentucky; admitted to Marine Hospital, Cairo, Ill., March 17, 1886, with lobar pneumonia; meningitis developed next day; died March 25, 1886.

Autopsy (*fourteen hours after death*).—Body well nourished. *Rigor mortis* passing off. Brain: Intense congestion of vessels of scalp; pia mater much congested at superior and lateral surfaces; deposits of lymph between sulci and in longitudinal fissure; congestion and effusion most marked on posterior and lateral surfaces of right cerebrum; cortex flattened; texture softened in patches, and separation of pia mater tears portions of brain substance with it. Ventricles and subarachnoid spaces contain a large quantity of serum; walls of lateral ventricles softened; choroid plexus congested; puncta vasculosa numerous. Base of brain free from signs of inflammation. Chest: Trachea and bronchi full of frothy serum; right lung solidified; throughout upper and part of middle lobes gray hepatization was found, involving the whole texture of the lung; lower lobe hepatized throughout, except a small portion at base of lung, which is crepitant and floats in water; left lung congested; no infiltration. Pleuritic adhesions extensive on both sides of chest, most marked on left, and attaching base of left lung to diaphragm; no fluid in sac of pleura on either side. Pericardium non-adherent, and sac contains about 35 grammes of fluid. Heart large, surrounded by fat; right side distended; contains fluid blood; tricuspid valve healthy; competent with water test; pulmonary valves healthy and competent; clot in pulmonary artery extending partly into ventricle. Mitral valve beady on margins, and thickened. Edges of aortic valves puckered; calcareous spots in segments, and valves do not fold back well against aortic wall; stenosis of valve; atheromatous patches in aortic wall. Left ventricle dilated and wall fatty—sequence of compensating hypertrophy. Right ventricle slightly dilated. Abdomen: Liver large, healthy; gall-bladder empty; stomach and intestines healthy; spleen large and granular when torn; pancreas healthy; right kidney shows increase in cortical structure and pyramids in central portion of the organ obliterated; capsule non-adherent. Left kidney cortical, and medullary structure in normal proportions. Structure seems soft and slightly congested.

Weight of viscera: Brain, 1,488 grammes; heart, 656 grammes; right lung, 1,664 grammes; left lung, 944 grammes; liver, 2,592 grammes; spleen, 720 grammes; right kidney, 224 grammes; left kidney, 256 grammes; pancreas, 96 grammes.

CASE 3.

W. W.; aged 48; admitted to the Marine Hospital, Cincinnati, Ohio, December 11, 1885; died April 10, 1886.

History.—This patient was transferred from the hospital in Wheeling, W. Va., in which he had been since October 21, 1886. Not having sufficient intelligence left to tell anything about himself, the only history of his case is from the surgeon at that port, and is as follows: "The symptoms present on admission were general debility, uncertain muscular movement, trembling of tongue when protruded, and of both upper and lower extremities. I soon learned also, in addition to the mental impairment, that the patient was at times attacked with vertigo. He has several times fallen on the street from this cause. A disposition to laugh on the slightest provocation also noticed. The patients in the same ward with him report him as doing silly things at night sometimes, such as arranging all the chairs and spittoons around his bed. They also report him as very restless; wandering about the ward and disturbing the rest of the patients. Several times he escaped from the hospital after dark, once not returning until the next morning. Recently, when he was restrained, he became very much excited, the trembling of limbs became markedly increased, and the following day he purposely tore his clothing." * * *

He has become gradually worse from month to month, both as respects his intelligence and physical nature.

There seems to be no distinct paralysis, but a general weakness of the muscular system and loss of co-ordinating power. Does not complain of any pain, and has had no fever at any time. Treatment, symptomatic and supporting. After six months' hospital treatment he died, April 10, 1886, from exhaustion.

Autopsy.—*Rigor mortis* well marked. Body very much emaciated. The only examination is made of the brain and its coverings.

The calvarium is with much difficulty removed because of the firm attachments of the dura mater. All the membranes are firmly united together and to the brain by yellowish lymph masses along the entire length of the superior longitudinal sinus and to a distance on each side of it of one and a half inches. The membranes were very much thickened in this region, and could not be separated from the brain without tearing the brain tissue.

The entire surface was of a dark purple color from venous engorgement. The brain substance showed no microscopical changes except evidences of congestion.

Cause of the disease without doubt was the excessive heat from the furnace (fireman), this keeping up the long-continued congestion.

CASE 4.

L. W.; aged 25; admitted to Marine Hospital, Cincinnati, Ohio, January 31, 1886; died February 6.

History.—When admitted patient was unable to give a trustworthy account of himself. It was learned from others on the same vessel that a week or two before taken sick he was laboring on the steamer Ohio,

that was cut down by the ice and came near sinking; that he was very much frightened at the time, and was some time in the cold water; that since that time "he had not been in his right mind." He is now delirious and stupid; does not complain of anything, but is constantly talking; imagines himself driving the laborers at work aboard the boat. He has constant involuntary spasmodic movements of arms and legs, more especially of the former.

No evidence of injury. Pulse 80. Has retention of urine. Will take food if put into mouth. Is given potassium bromide 1 gramme, every three hours.

February 4.—Involuntary passages.

February 6.—Comatose; died 2 P. M.

Autopsy.—Body very small and much emaciated.

Very general deposit of lymph over the surface of base of brain, over the pons and medulla, extending down the cord and a short distance in the Silvian fissures. Veins very much injected. Convex portion normal. No other organs in abnormal condition.

CASE 5.

Traumatic Meningitis.

W. W.; aged 32 years; native of Norway; admitted to Marine Hospital, Vineyard Haven, Mass., November 20, 1885, and died November 24.

History.—On November 18, 1885, this patient fell into the hold of a schooner, a distance of 14 feet, striking on his head and shoulders, two days previous to being received into hospital. Complete unconsciousness, resulting from the concussion, from which but partial recovery had occurred; symptoms of meningitis had already developed, somewhat complicated by the continuous symptoms of concussion; pulse 90, weak and fluttering; temperature 38.30° C.; breathing slightly stertorous; some confusion of thought and embarrassment of utterance, with incoherency; suppression of urine; tongue dry. Remedial measures adopted were energetic, and as the facts and symptoms detailed would properly suggest; any symptoms of improvement that developed were but transient. Symptoms of meningitis with effusion increased, and death ensued on the 24th of November, six days after injury.

Autopsy (*twelve hours after death*).—*Rigor mortis* complete; ecchymosis of head, neck, and shoulders; exudation of blood from external auditory canal; section of scalp showed connective tissue intensely engorged, and beginning to break down over right parietal and occipital bones. Upon removing calvarium the dura mater showed intense engorgement, with considerable effusion into right and left ventricles; the serum was tinged with blood.

INFLAMMATION OF DURA MATER.

Mastoid Abscess.

J. W. C.; born in Jamaica; aged 29 years; admitted to the Marine Hospital, Portland, Me., June 30, 1885; died July 23.

History.—The patient was forwarded from Rockland, Me. On admission he complained of stupefying and agonizing headache of the

anterior portion of head; photophobia; lachrymation; and stated that he had neither eaten nor slept for a week. Temperature 36.8° C.; pulse soft, full, compressible, and with respiration normal. The head was painted with camphor-chloral; full doses of chloral, morphia, and bromides, frequently repeated; blister applied to nape of neck, and a large stimulating rectal enema, in conjunction with a mercurial purge, materially modified the pain. A full dose (2 grammes) of quinia sulphate, with inunctions of mercurial ointment on thighs, supplemented by full doses of iodide of potash and tincture of hyoscyamus, seemed to greatly improve his condition. After some ten days' treatment the patient referred some pain to the right ear, which was poulticed with flaxseed saturated with tincture of opium, atropia solution, and hyoscyamus tincture, alternated with the hot douche. No special lesion was detected, on examination, in the meatus or its vicinity. He improved apparently until five days before his death, when stupor supervened, deepening into coma, the temperature, pulse, and respiration gradually increasing until his death, at 7.50 A. M.

Autopsy.—Body that of a wiry, muscular mulatto, somewhat emaciated; *rigor mortis* absent. Head: Dura mater and arachnoid thickened and adherent. A mastoid abscess on right side had opened into the middle ear, thence into the calvarium. The thoracic and abdominal viscera, with the exceptions mentioned below, were normal, the lungs and pleura being markedly free from signs of any inflammatory products. Kidneys congested and cortical substance notably increased. Right heart dilated; thinned. Aortic orifice narrowed. Left ventricle hypertrophied.

NOTE.—This case was of interest in the fact that the disturbance in the vicinity of the right tympanum was so slight as to occasion but trifling inconvenience to the patient, apparently, and the examination of the parts failed to indicate to the reporter, or to those medical gentlemen who saw the case, the very grave changes in progress.—J. M. G.

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SOFTENING OF BRAIN.

CASE 1.

White softening.

M. E.; a Russian Finn; 52 years old; was admitted to Marine Hospital at Wilmington, N. C., April 27, 1885. He was transferred from Savannah, Ga., with the diagnosis of gastritis. When admitted he complained of pain in stomach and tenderness to pressure in the epigastric region, eructation of sour gas from stomach, constipation, and poor appetite. He also complained of weakness when he took any exercise.

About July 1, complained of hot, burning sensation about his temples at night. Deep reflexes exaggerated if changed from normal. He dragged his feet when walking.

August 1.—Sensation in feet and legs diminished. Sensation to pain greatly diminished. Did not feel pins when pushed into the skin so as to remain fast when not held by hand. Could stand with eyes closed, or on one foot with eyes open. He complained of constriction about his waist. Bowels still constipated, going three or four days without an operation unless laxatives were given. Eyesight good; so are all the special senses. Complains of sleeplessness. Gradually declining. His intellect remained clear. No loss of motion. Talks intelligently.

September 3.—Had a slight shock. After shock unable to talk. He knew milk when in his sight, and endeavored to take the bowl containing it from the nurse. After the shock there was paralysis of right side. There was no drawing of the face to one side. He died on the 19th of September.

Autopsy.—The spinal cord was carefully removed. The skin was covered with small bronzed-colored patches from 1 to 3 centimetres in diameter. Body emaciated. There was a part of the spinal cord in the region of the last dorsal and first lumbar vertebræ that seemed harder than other parts as one passed the finger along the cord. In the optic thalamus and corpus striatum was a patch of white softening. The patch involved the transverse section of both these bodies. There was no trace of a hemorrhage, either old or recent. The débris in the softened patch resembled partially cooked starch. Under the microscope the débris was made up of granular material undergoing fatty metamorphosis; a few pus cells and connective tissue cells.

CASE 2.

C. Y.; age 45; nativity, District of Columbia; admitted to Marine Hospital, San Francisco, Cal., October 15, 1885; died December 5.

Autopsy (eighteen hours after death).—Rigor mortis marked. The following were the brain lesions found: General softening and anæmia of the entire encephalon, the bulk of which was considerably diminished. There was no localized softening. The membranes contained products of inflammation, especially the pia mater, in which were found many inflammatory patches surrounding the vessels. The arteries of the brain generally were in a decidedly atheromatous condition. This was the case with the basilar in particular, whose caliber, though permeable, was much diminished.

The brain was so much softened that, in removing it from the cavity of the skull, openings were unavoidably made in the ventricles, allowing the fluid in them to escape; so that no accurate estimate of its amount could be made, though it was considerably greater than normal.

Several bodies of gelatinous consistence were found in the lateral ventricles, some loose, others attached by frail pedicles to the walls. These bodies were round in shape and of various sizes, ranging from that of small shot to the size of a rather large pea.

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APOPLEXY.

CASE 1.

Hemorrhage into the Corpus Striatum, following Operation of Internal Urethrotomy.

R. G.; born in Italy; 43 years old; admitted to Marine Hospital, New Orleans, La., January 9, 1886; died January 19.

Had sunstroke in the summer of 1885, and has since been subject to vertigo and headache. Has a close, long, and resilient stricture, about which he is very despondent. Divided this, without anæsthetics, January 11, 1886, and he had a urethral chill the same day of short duration, but quite severe. Was nearly well enough to be discharged, when on night of January 17 he was reported as delirious. Next morning he

was irritable and somnolent, and showed a partial (incomplete) right hemiplegia. Felt better and in good spirits that night at sick-call, but the next morning, after a good night, he had a convulsion at 7 A. M., passed into deep coma, and died in two hours.

Autopsy.—Body well nourished, face pallid. Urethra: From the seat of stricture to within 1 centimetre of the meatus the roof of the urethra showed a smooth linear nearly-healed incision. (The guarded knife of Otis's urethretome had been used in the urethrotomy.) The stricture was entirely divided on the roof of the urethra, but the side walls were hard and inelastic. Bladder: Contained about 100 C. C. of urine, normal in appearance, and not albuminous, and without casts. The muscular coat was hypertrophied, the fasciculi standing out in well marked bands; otherwise normal. Ureters slightly dilated at lower ends; left is most so. Kidneys: Capsules not adherent; left one below normal size, and slight diminution of cortical substance. Right kidney normal. Heart: 6 C. C. of fluid in pericardium. Heart full sized and in moderate contraction. Valves normal save for a placque of stiff substance in one aortic leaflet, apparently beginning atheroma. Lungs heavily congested; adhesions on right side between chest-wall and visceral pleura; none on left. Brain: No cerebro-spinal fluid escaped on opening the skull-cap; but little blood in the sinuses; meninges rather ænemic; all the ventricles filled and distended with blood. The source seemed to be in the left corpus striatum, near its base, where a reddened, soft spot existed, about 1 by 2 centimetres, from which the blood had broken its way into the left lateral ventricle, and thence had passed into the right lateral and back as far as into the fourth ventricle. The tissue around the soft spot was reddened and injected a little way, but firm. The vessel from which the blood had flowed could not be discovered.

CASE 2.

A. J.; (negro); aged 48; nativity, Georgia. Admitted to marine ward Saint Joseph's Infirmary, Savannah, Ga., December 21, 1885.

At time of admission there was partial coma. Stertorous respiration; contracted pupils; incomplete paralysis of both sides; some slight muscular twitches at short intervals.

Cold applications were made to head. Ol. tiglii administered and a transient good effect obtained. The patient rallied somewhat, but soon sank into a deeper coma than before.

December 22, a. m.—Coma profound. Motor paralysis total. Pupils widely dilated and not reacting to light or touch as they did yesterday. Death supervened at about 8 P. M. December 22.

Autopsy (made fifteen hours after death).—Showed an extensive hemorrhage into cortical substance of cerebrum and a complete filling of all the ventricles with bloody serum.

CASE 3.

W. J.; aged 35; admitted to marine ward, Saint Mary's Infirmary, Galveston, Tex., in an unconscious condition on November 27, 1885, and died November 29.

History.—Nothing known of him prior to the 26th (day before) by his associates. They state that on the 27th he had fallen on deck in a "hard fit," and they were advised to take him to the hospital. Examination gave a fluctuating pupil—now large, and again contracted to a "pin point." No response to light. Slight left hemiplegia. Coma,

with stertor and widely dilated pupils continued, and terminated in death.

Autopsy (eight hours after).—Rigor mortis commencing; limbs still flexible; no evidences of external violence; hypostasis of shoulders and loins. Viscera normal, save the lower segment of large intestine, including the sigmoid flexure, which appeared atrophied. The gut had a peculiar whitish and shining appearance at this point, in striking contrast to the rest of the canal. Mesentery was apparently normal. The caliber of the intestine about twice that of a crow-quill. This was eliminated as a probable cause of death. Nothing to indicate malignancy. Upon removal of the calvarium an intense venous engorgement of all the vessels of the brain was found. No extravasation of blood at any point. Right lateral ventricle full of transuded serum; left not so full. Arachnoidean spaces very much distended. Death from cerebral congestion.

CASE 4.

J. W. B.; aged 52 years; was admitted to the Contract Hospital, Vicksburg, Miss., on June 16, 1885.

Acting Assistant Surgeon S. D. Robbins gave the following history of the patient's condition at that time and subsequently: Lack of power of co-ordinating his movements, although the muscular power seemed as great as ever; while he could walk, yet his gait was very unsteady, has double vision and slight strabismus, though the latter is not a constant phenomenon. The unsteady and irregular muscular action became less marked as the case progressed, but the loss of muscular control rendered him unable to walk. Occasionally there seemed to be a slight amelioration in his condition, but never any improvement of consequence. The mental condition of the patient was variable. He gave no history of syphilitic infection, and stated his indulgence in alcoholic beverages had been moderate. The treatment was tonic and sedative.

The patient was transferred to the Marine Hospital, Memphis, Tenn., arriving November 10, 1885. He was a well developed man, gray hair, brown eyes with equal pupils. Great difficulty of co ordination of muscles in walking. Slight tremor of arms when moved. The patellar tendon reflexes were present. While the journey had not fatigued him, still he was ordered rest in bed.

November 11.—He ate a fair breakfast, but vomited it in three-quarters of an hour. At the hour of the ward visit he said he felt very well. At 9.15 A. M. he again vomited and complained of severe headache. At 10.30 he was very restless, and talked irrationally, scratching his abdomen, legs, and genitals all the time. At 11 o'clock he commenced violent efforts at masturbation; his legs were cold and stiff, eyes fixed. At 10 o'clock rigor; patient speechless, effort to move the right hand only. At 2.15 P. M. his breathing was stertorous, eyeballs insensible to the touch, vomiting. At 5.30 P. M. the entire left side of body was insensible to irritation either thermal or tactile; no movement of extremities. Similar condition on right side except a slight twitching of the forearm. Eyes fixed, pupils equally contracted; breathing stertorous.

This condition continued daily, except the motion of the right forearm, which ceased on the 12th, and on the 15th the left pupil was more dilated than the right. Liquid food was given by the mouth. Involuntary evacuations of bladder and rectum. The temperature and pulse continued normal until the 16th, when there was a slight elevation of temperature. The patient died at 8.30 P. M., November 16.

Autopsy (twenty-four hours post mortem).—The bony structure of the calvarium was very dense; all sutures ossified. Veins of dura mater engorged. In removing the brain an exudation of blood, beneath the pia mater covering the superior surface of the cerebellum, was disturbed. This hæmorrhagic clot extended upwards about the crura, and through fourth and third ventricles into the right lateral ventricle. This was filled with coagulated blood, and the middle and posterior cornua were deepened at the expense of the surrounding cerebral substance. The blood-vessels of the ependyma were injected, and the puncta vasculosa of the adjacent convolutions engorged. No trace of the choroid plexus was found. A considerable quantity of cerebro spinal fluid was found in the left lateral ventricle; but, strange to say, the septum lucidum was not ruptured. All the cerebral arteries were atheromatous. The brain weighed 1,360 grammes, exclusive of 90 C. C. of blood-clot.

Thoracic cavity: The right lung was adherent by a few old adhesions. Inferior lobe hepatized. Weight, 835 grammes. The left lung weighed 698 grammes; was normal, excepting old pleuritic adhesions. The heart weighed 608 grammes; hypertrophy of the left ventricle; valves normal; atheroma of aorta.

Abdominal cavity: The liver weighed 1,695 grammes; normal. The right kidney weighed 108 grammes; the left, 115 grammes; both normal. The spleen weighed 212 grammes. Stomach and intestines normal.

Microscopic examination of the spinal cord failed to show any sclerosis of the posterior columns.

Case 5.

R. O.; aged 35; nativity, American; admitted to marine ward, German Hospital, Philadelphia, Pa., June 21, 1886.

History.—This patient was reported to the Marine Hospital office by messenger about 9 A. M., June 21. He was visited at the dock where he was lying ill. He was found in a comatose condition, and removed to hospital in ambulance. He arrived at the hospital at 11.30 A. M., in the same comatose condition. Pupils slightly dilated and totally insensitive to light or irritation. Respirations, 15; pulse, 45, and temperature, 36.6° C. He was bled at the elbow, 450 C. C. Ordered ten minims of tincture belladonna at once, dropped on the tongue.

After venesection his pulse rose to 82, respiration 19, and temperature 39.5° C. He died suddenly, at 12.35 P. M., same day, about 45 minutes after admission.

Autopsy, 9 a. m.—Brain only examined. A partially-organized blood-clot was found occupying the left lateral ventricle and fourth ventrialis. The left lateral ventricle was ruptured and extravasation had occurred in the surrounding brain tissue, which was softened and broken down.

Cause of death, cerebral hæmorrhage.

Case 6.

Cerebellar Hæmorrhage.

A. C.; colored; aged 40; nativity, Pennsylvania; was admitted to the Marine Hospital, Detroit, Mich., November 2, 1882.

Family history unknown. Personal history of syphilis: Four days previous to admission was completely paralyzed on left side, and when admitted was entirely helpless, unable to speak distinctly, swallowed with difficulty, and passed urine and fæces involuntarily. There was

also partial facial paralysis, also left side, but no vomiting, or pain in back of head. His condition existed almost unchanged for over a year, when gradual improvement began to take place. Just previous to his death could talk plainly, facial paralysis had disappeared, could walk a little, and had regained control of sphincter. Death occurred suddenly, soon after eating a hearty supper, May 22, 1886.

Autopsy (fourteen hours after death).—*Rigor mortis* marked; body well nourished; direct inguinal hernia (very large) of left side; lungs congested; trachea and bronchi clear of obstructions; heart normal, and contained only a little fluid blood; liver, fatty; spleen, very small; kidneys, stomach, and intestines, normal. Brain: Dura-mater strongly adherent to calvarium; falx cerebri contained several large bony plates, pia mater cloudy and thickened; blood-vessels of brain distended with blood, arteries particularly so. On the inferior surface of the right superior lobe of the cerebellum was a depression, somewhat larger than a silver quarter, with an irregular but well-defined margin. The floor of this depression was of a reddish-yellow color, and consisted of softened and broken-down brain substance. The loss of brain tissue was considerable, showing that the clot causing the depression must have been of large size. A clot the size of a large pea was observed at the junction of medulla and cerebellum on the inferior surface of the latter. No atheroma or miliary aneurisms of blood-vessels were seen. The records show that cases of cerebellar hæmorrhage are rare, those followed by hemiplegia especially so. Out of 93 cases of cerebellar disease collected by Andreal *a* there were 19 cases of hæmorrhage into the cerebellum, alone, only 5 of which were accompanied by hemiplegia. There were also 12 cases associated with cerebral hæmorrhage, in 3 of which hemiplegia existed.

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TETANUS.

A. G.; aged 33 years; nativity, Missouri; colored; admitted to Marine Hospital, Cairo, Ill., April 2, 1886; died April 5.

History.—On admission he could not articulate plainly and therefore could not give a clear account of the origin of his trouble. He has had difficulty with the muscles of deglutition and mastication for two or three days, and also has had severe cramp-like seizures in muscles of the extremities. He has slight opisthotonos and can swallow with difficulty. Temperature is normal.

April 3.—Ordered pot. brom. in full doses every two hours; no improvement; opisthotonos increasing; cannot remain in recumbent posture; is restless and tetanic; seizures frequent. Temperature, 39° C.; pulse, 120.

April 4.—Gave .06 C. C. of alcoholic ext. calabar bean by hypodermatic method every three hours, alternating with .015 gramme of morph. sulph. This was followed by some improvement; he could swallow a little better; could protrude his tongue slightly, and the tetanic seizures were not so frequent, though the opisthotonos was still present. Evening temperature, 30° C. Morphia stopped.

April 5.—Is resting easier; takes some liquid nourishment, and seems better. At 7 P. M. his respiration became embarrassed; gradual loss of consciousness came on, and death took place at 9 P. M. No elevation of the temperature of the body was observed after death.

a Flint's Physiology, p. 713.

Autopsy (*eighteen hours after death*).—*Rigor mortis* well marked; large hydrocele on right side; greater portion of glans penis absent; cicatrices of old buboes in both groins; body well nourished; no evidence of any recent wound or injury. Spinal cord: Membranes deeply congested; no effusion noted; cord softened in dorsal and cervical regions; rest of the cord normal in consistence. Sections of affected portions of the cord (hardened in chromic acid), under the microscope (one quarter of an inch objective and B eye-piece), show much granular matter and numerous translucent particles scattered through the section. Brain: On removal of skull-cap great venous congestion was noted; sinuses distended with blood. Over the left frontal convolution (Broca's) a cavity the size and shape of a pecan nut was observed, evidently an old infarct, the result of embolism. No occlusion found of basilar, carotid, or meningeal arteries. Consistence of brain normal on section; choroid plexuses filled with venous blood; foramen of Monro is of large size; septum lucidum not well defined, and the passage between the ventricles is large. Slight effusion marked over Sylvian fissures (lymph). Medulla and pons varolii seem softer than normal, and the nuclei not as well marked as usual. Chest: Lungs congested; no pleuritic effusions or adhesions, excepting a slight pleuro perciardial adhesion on left side. Grayish spots on surface of pericardium; no adhesions, and a normal amount of fluid. Heart of medium size; right side full. Large clot in pulmonary artery, extending into division of the vessel, and into ventricle and auriole, entangling chordæ tendinæ of tricuspid. Pulmonary and tricuspid valves healthy and competent. Clot in left side of heart, extending through auricle and ventricle into aorta; clots of whitish-yellow fibrin of the same consistence throughout, and no central nuclei, probably formed during death by slow apnœa. Mitral leaflets ready to touch near borders, but sufficient. Vegetations found on one segment of aortic valves; valves competent; atheromatous patches in wall of aorta. Abdomen: Liver soft and easily torn with the fingers; gall-bladder distended with bile; no calculi found; duct free; pancreas soft; spleen very soft and friable and removed whole from the body with some difficulty; kidneys healthy looking, softer in consistence than normal; left kidney somewhat horseshoe-shaped; right kidney has a cheesy-looking patch in one of the pyramids. Stomach and intestines healthy, excepting a portion of the ileum, which is contracted for the space of two inches, about seven or eight inches from the ileocæcal valve. Bladder healthy.

Weight of viscera: Brain, 1,312 grammes; heart, 416 grammes; lungs, 1,920 grammes; liver, 1,920 grammes; spleen, 192 grammes; pancreas, 128 grammes; suprarenal capsules, 8 grammes each; right kidney, 224 grammes; left kidney, 288 grammes.

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EPILEPSY.

H. M.; aged 35 years; nativity, Ireland; admitted to marine ward Saint Joseph's Hospital, Baltimore, December 8, 1885; died December 12.

When admitted the patient was suffering with a lacerated wound of the forearm, which was healing kindly, when he was attacked by the severe epileptic seizures which caused his death. About midnight of the third day after his admission the patient uttered a cry, sprang from the bed out on the floor against a table, cutting a severe gash in his forehead. He there had a most severe epileptic seizure, which lasted

about eight minutes, and was followed by deep sleep, from which it was difficult to arouse him. Bromides were administered freely after the attack ceased, and the patient rested well until 6 o'clock the following morning, when another seizure more severe than the first, followed by profound sleep, which passed into coma, during which the patient died.

Autopsy (ten hours after death).—*Rigor mortis* moderate. Thoracic cavity examined; heart slightly enlarged and some deposit of fat noticed. Right auricle and ventricle dilated with dark blood. No abnormal lesions found in other portions of the body. The calvarium was removed, the membranes of the brain, as well as its substance, fissures, and ventricles were examined without developing any additional abnormality except, possibly, a paleness of the pia mater.

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VALVULAR DISEASE OF HEART.

H. J.; aged 35 years; nativity, Denmark; admitted to Marine Hospital, San Francisco, Cal., December 21, 1885; died January 27, 1886.

Autopsy (nine hours after death).—Body fairly well nourished. *Rigor mortis* slight. Considerable œdema of legs. Pleural cavities contained considerable fluid (exact quantity not determined). Evidence of both recent and old pleurisies. Many emphysematous patches interstitial on surface of lower lobes of both lungs. Heart displaced to the right. The pericardium was dilated and contained nearly 500 C. C. of serous fluid. Lung tissue congested and slightly œdematous. No cavities or tubercular deposits. Heart fatty and much enlarged (hypertrophied), especially the right side, the walls of which were considerably thicker than those of the left. Aortic valves sufficient but thin. Aorta normal. A small, partly organized clot was attached to the interior walls of the left ventricle and projected into the aorta, which undoubtedly interfered with the proper action of the valves during life. Large fibrinous clot in right ventricle, which, with the slight insufficiency found in the tricuspid valves, had undoubtedly allowed of free regurgitation during life. Mitral valves decidedly insufficient. Pulmonary artery much dilated (diameter 4.5 centimetres), thickened and atheromatous. Only remnants of the valves were left, not sufficient to prevent in more than a slight degree the return flow of blood through the orifice, which was nearly 3.5 centimetres in diameter. Other organs not examined.

CASE 2.

Pulmonary Œdema.

P. F.; aged 52 years; nativity, Ireland; admitted to Marine Hospital, Chicago, Ill., January 5, 1885; died April 25, 1886.

History.—Patient stated that his health began to fail without appreciable cause; complained of debility, constant headache, and occasional dyspnœa. Was very anæmic. A few months after admission he suffered from general anasarca, but this gradually subsided, leaving only a slight œdema of the lower extremities. There was a loud systolic murmur at base of heart. Just before death he showed symptoms of pulmonary œdema.

Autopsy.—Body emaciated; *rigor mortis* present. Each pleural sac contained about 400 C. C. of clear yellowish serum; the pericardial sac about 250 C. C. Both lungs were œdematous, serum flowing freely on sec-

tion. The heart was enlarged, weighing 475 grammes; its cavities contained a few soft, pale clots. There was considerable dilatation, most marked in right auricle and ventricle. Tricuspid orifice very much dilated; mitral and aortic valves normal. There was considerable dilatation of the ascending aorta, this portion of the vessel showing evident signs of calcareous degeneration, its coats being thinned and of unequal thickness, and the tunica intima very much roughened. Muscular tissue of heart was pale, soft, and flabby. The liver was engorged with bile, and its capsule could be detached with great ease. The gall-bladder was distended with dark bile. There was no obstruction of the bile-ducts.

CASE 3.

Granular Kidney.

J. D.; aged 26; nativity, United States; admitted to Marine Hospital, Chicago, Ill., October 14, 1885; died December 31.

Is a small, lightly-built man; states he has been healthy all his life, with exception of an attack of acute rheumatism a couple of years ago; has never been in as good a condition since the rheumatic attack as before. For several months has complained of disorders of digestion, general weakness, malaise, with some shortness of breath. On examination he was found to have some œdema of the lower extremities. Breathing jerky and rapid; pulse 82; shot-pulse very irregular; forcible pulsation of great vessels in the neck. Palpation shows a tumultuous heaving motion of the heart. Apex beat displaced downward and to the left. Percussion shows area of cardiac dullness to be largely increased. A systolic murmur heard with the first sound of the heart, with greatest intensity at the second sterno-costal articulation on the right side (this murmur is very loud and rasping in its character). At the apex beat is point of greatest intensity of a soft, blowing, systolic murmur, which is also audible at the inferior angle of the scapula on the left side. Has more or less dyspnœa. Urine is scanty, high colored, loaded with albumen, granular casts, &c. Specific gravity 1025. The disease and complications steadily increased in severity, and progressed to a fatal end December 31, 1885.

Autopsy.—Body very much swollen and discolored. *Rigor mortis* present. Genitalia enormously swelled and of a livid hue. Large hemorrhoidal tumors at the margin of the anus. Heart largely hypertrophied, especially left ventricle, with concomitant dilatation; diameter of auricular ventricular rings very much increased in size. Aortic valves covered with thick irregular growths, and so rigid that they could not be pressed back against the wall of the aorta, and thereby caused obstruction.

Bicuspid valve thickened, indurated, and shortened. Edges of leaflets roughened by calcareous matter embedded in the indurated valve. Valves of right heart deformed by inflammatory action, and secondary results following the extensive disease of the left heart. Atheromatous deposits in pulmonary artery. Lungs œdematous and dark-colored. Liver enlarged and hardened, "nutmeg liver." Spleen congested and softened; pancreas showed evidences of parenchymatous inflammation, hardened, swelled, and dark-red in color. On section it showed a grayish-red surface dotted with bloody points. In different places in the gland were small collections of pus. Kidneys: Contracted granular kidney. Hardened, contracted, very red and granular. Capsule thickened and difficult to detach. Surface of viscus granular; substance coarse, tough, and fibrous. Effusion of fluid in all the cavities of the body; forming ascites, hydrothorax, hydropericardium, &c.

CASE 4.

A. McL.; aged 37; nativity, United States; admitted to Marine Hospital at Chicago, Ill., January 5, 1885; died December 9.

Has been suffering for a long time from valvular disease of the heart, dyspnœa, gastric and intestinal disturbances, and symptoms pointing to renal complications. Has general anasarca, ascites, and for several months has had peritonitis of a chronic type. Died from cardiac syncope.

Autopsy.—Body very much swollen. Heart: Narrowing of aortic orifice from inflammatory thickening and adventitious growths on the leaflets. Mitral and tricuspid insufficiency, one of the cusps of the mitral having shrunk almost to a cord. Hypertrophy and dilatation of the heart. Hydropericardium, hydrothorax, and œdema of the lungs. Contracted granular kidney and evidences of severe pelvic cellulitis.

CASE 5.

D. B.; 50 years old; born in Pennsylvania; first admitted to Marine Hospital, Louisville, Ky., with anasarca, September 14, 1885. Diagnosis amended October 18, to heart disease. From his own report has been sick for past two years. Toward the last dropsy became excessive, causing death by impeding heart's action. Death occurred November 8, 1885.

Autopsy.—Body dropsical from head to foot. Chest cavity completely filled with water. Pericardial sac slit and heart removed. Right auricle dilated and much thinned Appendix larger than usual. Tricuspid valve insufficient. Hypertrophy of right ventricle (eccentric), but less than would have been suspected. Left auricle ruptured in removing. Its walls in places were no thicker than writing paper, and had a bruised look. Left ventricle both dilated and hypertrophied. Mitral valve had hard, irregular, fibrous feel, and, owing to the ventricular hypertrophy, the leaflets were parted beyond all possibility of normal function. Aortic valves in pretty much the same condition. Kidneys somewhat enlarged, pale red in color, and the seat of fatty degeneration. Other organs not examined.

CASE 6.

R. K.; colored, aged 40 years; nativity, Kentucky; admitted to marine ward, Mercy Hospital, Pittsburgh, Pa., October 12, 1885; died November 12.

The most prominent symptom in this case was dyspnœa, which was so troublesome as to prevent the patient lying down. The impulse of the heart could be felt over a considerably increased area; the extent of dullness on percussion being also increased. A loud murmur was heard with both sounds of the heart over the apex, also at the second intercostal space at the right of the sternum. This was louder in the former position.

Autopsy. The heart was considerably dilated, and very slightly hypertrophied. The mitral and aortic valves were much thickened and contracted. The lungs were somewhat œdematous, and each pleural cavity contained about 500 C. C. of serous fluid.

CASE 7.

M. D.; aged 35 years; nativity, Ireland; admitted to the marine ward, *Mercy Hospital*, Pittsburgh, Pa., July 1, 1885; died July 16, 1885.

He had been suffering from rheumatism of an acute character for some time previous to his admission, affecting principally the knee-joints. He also suffered pain in the cardiac region, at times quite severe. Physical examination revealed a murmur of considerable intensity over the apex of the heart, accompanying the second sound. The area of dullness was not increased, but pulsation was noticed below the ensiform cartilage.

Autopsy.—The heart was much enlarged, but principally by dilatation of its cavities. There was, however, slight hypertrophy of the walls of this organ. The mitral valves were thickened and somewhat calcareous. The other valves were normal. The other organs of the body were not examined.

CASE 8.

T. D.; colored, aged 47 years; nativity, Arkansas; admitted to marine ward, Mercy Hospital, Pittsburgh, Pa., December 19, 1885; died April 28, 1886.

Dyspnœa and œdema of the lower extremities were the only troublesome symptoms at the date of his admission to hospital. There was some irregularity in the action of the heart. The apex beat was very near the ensiform appendix, the impulse extending over a large area. The area of dullness on percussion was double its normal extent. There was a loud musical murmur most distinctly heard at apex, but plainly heard also over the aortic valves. There was a well-marked arcus senilis. The arteries, especially the temporal, were calcareous.

Autopsy.—There was some fluid in pleural and pericardial cavities. The lungs were normal except the apex of the right, which was consolidated and fastened to the chest-wall by inflammatory adhesions. The heart weighed 640 grammes. Its cavities were very large, at least twice their normal size. There was no thickening of the walls, those of the right ventricle being much thinner than normal. The mitral valves were thickened with hard, fibrinous deposits, these extending into the chordæ tendinæ. The aortic and tricuspid valves were also thickened. The liver was of a yellow tint, weighing 1,750 grammes.

CASE 9.

J. M.; aged 26 years; nativity, Pennsylvania; admitted to marine ward, Mercy Hospital, Pittsburgh, Pa., May 24, 1886; died May 26.

When admitted he was suffering from dyspnœa to such an extent that he was unable to lie down. There was great œdema of the lower extremities. The urine contained some albumen.

Autopsy.—The lungs were dark colored from venous stasis. The heart weighed 640 grammes The aortic valves were covered with large vegetations, some of them five lines in length. The other valves were normal in appearance, except the mitral, which was slightly thickened. The heart was somewhat dilated, and the walls of the left ventricle hypertrophied. The spleen weighed 368 grammes; it was granular and dark colored. The kidneys were swollen, each weighing 250 grammes. The liver weighed 1,675 grammes, and presented a nutmeg appearance. Old bands of lymph extended from this organ to the under surface of the diaphragm and transverse colon. There were also adhesive bands from the diaphragm to the spleen. The brain was normal, except that the veins were distended.

CASE 10.

Tubercle of Lungs.

R. K.; aged 50; nativity, Ireland; admitted to the Marine Hospital at Chicago, Ill., November 18, 1885; died January 25, 1886.

History.—This patient stated that he had had a cough for two or three years with occasional attacks of hæmoptysis and palpitation of heart. Had been troubled with dyspnœa for past six months. There was a systolic murmur at apex of heart, slight dullness over upper lobe of right lung, and diminished respiratory murmur on both sides of chest. Death resulted from an attack of pulmonary hemorrhage.

Autopsy.—Rigor mortis well marked. Body well nourished, there being a considerable deposit of fat in subcutaneous tissue over sternum and in abdominal wall. The anterior surface of right lung was adherent to chest-wall and the left pleural sac entirely obliterated, the adhesions being very dense and resisting. A small cavity was found in the lower lobe of left lung and another of the size of a hen's egg in the upper lobe, the latter filled with semi-fluid blood. The right lung was studded throughout with miliary tubercles. The heart was somewhat enlarged, the left ventricle hypertrophied and the mitral valve studded with fibrinous vegetations. An *ante-mortem* clot was engaged among the chordæ tendinæ of the left heart. The ascending aorta was dilated and thinned.

CASE 11.

F. W. B.; aged 27; born in Maine; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., May 13, 1886, and died June 21.

The above diagnosis was made and the patient placed upon cardiac tonics. He improved slowly until June 10, when he took his discharge against advice. After leaving the hospital he failed rapidly and returned in a much worse condition June 15. Active delirium now set in and he died from paralysis of the heart on the sixth day after his readmission.

Autopsy (fifteen hours after death).—Rigor mortis well marked, emaciation slight. A small amount of effusion was found in the pleural cavities, as well as in the pericardium. The heart was in a state of diastole, hypertrophied, its superficial veins engorged, a slight amount of fat upon its surface, very dark in color, with pus corpuscles among the muscular fibers, showing evidences of a recent carditis. Both auricles and ventricles were filled with *ante* and *post mortem* clots, firmly attached to the columnæ carneæ and extending through the auriculo-ventricular and aortic openings. The mitral and aortic valves were (completely) destroyed. The lungs were normal with the exception of the lower lobe of the left, which was slightly congested. Other organs normal.

CASE 12.

J. S.; aged 60; born in New York; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., March 10, 1886; died March 27. Patient was brought to the hospital in the ambulance in a very feeble condition, complaining of pain and distress in the precordial region. An examination of the chest showed the patient to be suffering from cardiac hypertrophy, complicated with aortic and mitral regurgitation. Other organs normal. No albumen.

Autopsy (seven hours after death).—Rigor mortis slight; considerable emaciation. Heart was in a state of diastole, with a slight amount of

fat upon its surface and some degeneration of the muscular structure. Hypertrophy of left ventricle. The left auricle and ventricle were filled with *ante* and *post mortem* clots, the former well organized, firmly attached to the columnæ carneæ, and extending through the auriculo-ventricular opening and into the aorta. Mitral valves thickened, covered with calcareous deposits, and one of them bound down by old and firm adhesions to the columnæ carneæ. The aortic valves were found to be in the same condition, but the insufficiency was less marked. The pericardium showed slight evidences of recent inflammation. The lungs were in a healthy condition, and there were no pleuritic adhesions. Liver normal. Intestines dark colored but no indication of any recent inflammation. Spleen slightly enlarged and dark-colored. Kidneys surrounded by fat; capsule not adherent.

CASE 13.

Lardaceous Liver.

C. N.; aged 33; born in Sweden; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., June 28, 1886, and died in the ambulance before arriving.

The coroner was at once notified, who summoned a jury and ordered an autopsy to be made. Inquiry of N.'s friends revealed the fact that he had for some time suffered from "heart disease." His last voyage was to the West Indies, and while there he contracted a fever and was sick during the whole of the return trip. He was furnished medicines by the captain and recovered sufficiently to walk to the office in New York.

The jury found that said N. came to his death from paralysis of the heart, as the result of hypertrophy with dilatation, the paralysis being induced by his extremely debilitated condition.

Autopsy (*twenty hours after death*).—No external signs of violence. Body well nourished. There was ecchymosis on the thighs, slight œdema of the legs, and slight ascites. The skin was discolored over the surface of the body, being of a yellowish tint. The pupils were dilated. The left lung was bound by strong pleuritic adhesions, and seemed to be compressed. The posterior surface of this lung was very dark, as if from congestion, and this proved to be the case on cutting into it. The right lung appeared normal externally, but proved to be slightly congested on section. The heart was much enlarged, showing some evidences of fat. The veins of the heart were distended. The right auricle was filled with recent clots of very dark color. Large recent clots were also found in the right ventricle, imbedded in the trabeculæ. The left ventricle was likewise filled with recent clots, and the walls were hypertrophied; there was dilatation. Tricuspid valves normal. Mitral valves contained fibrinous deposit. The aortic valves gave some evidence of inflammation. The liver was lardaceous.

CASE 14.

A. B.; born in United States; aged 32; admitted to the marine ward, Sisters' Hospital, Buffalo, N. Y., April 23, 1886; died April 27.

Autopsy.—Body greatly emaciated. Not much *rigor mortis*. There was a small amount of serum in the pleural cavities; lungs congested, and the bronchial tubes partly filled with a frothy mucus. The heart was enlarged; the walls of the left ventricle much thickened. Both portions of the mitral valve were the seat of calcareous deposit, and both

were partly destroyed. The aortic and semi-lunar valves were found to be the seat of the same deposit, and they were slightly insufficient. A large quanty of serum in abdomen. The liver and spleen were enlarged. Kidneys normal. No other organs examined.

CASE 15.

G. H.; aged 53; native of Germany; was admitted to the marine ward, Saint Mary's Hospital, Galveston, Tex., December 2, 1885.

History of chronic heart disease.—Examination revealed regurgitation both at the mitral and aortic orifices. Heart area much increased. Pulsation in carotids very well marked, but not felt in radials owing to extensive calcification. It was impossible to determine whether the cardiac weakness was due to dilatation or to myocarditis, or to their coexistence. Death took place on May 10, 1886, from cardiac failure.

Examination of heart (made eighteen hours after death).—It was almost twice the normal size. Walls of both auricles much dilated, and those of right ventricle were dilated and very soft. Only a little fat was discernible in their substance, but at the apex there was a patch of fatty tissue undergoing absorption or liquefaction, and the wall at this point was translucent. There was thinning of the muscle from the blood-pressure during systole. Tricuspid filaments were incompetent. The anterior or superior leaflet was adherent. Patches of lymph were scattered over the walls of both ventricles, but were most numerous over the right. Left ventricle was dilated, but the walls were thicker than normal and fatty. Mitral filaments were free and soft, yet scarcely competent. Apex beat had been noted, during frequent examinations, about 1¼ centimetres below the nipple and a little to the right. The aortic valves were free but not pliable. The vessel throughout the arch was unyielding. The intima was of a pale-saffron color, and dotted with atheromatous patches, many of which had become hard plates of calcareous deposit, notably about the sinus. Coronary vessels not degenerate. Upon effecting the removal of a piece of this calcified tissue, it was found that the first layer or coat could be peeled off, leaving at places some of the atheromatous material adherent to the muscular layer beneath; portions removed tough and thickened. Death had evidently ensued from an incompetent heart. Endocarditis was probably the first lesion, followed by myocarditis, and the valvular incompetence dependent on both.

CASE 16.

P. D.; native of Maine; 52 years old; was admitted to Marine Hospital, Wilmington, N. C., January 15, 1885.

He complained of dyspnœa, poor appetite, indigestion, and general weakness. He had no cough. Physical examination showed systolic and diastolic murmur over the aortic valves. This murmur was transmitted along subclavian artery. There was a systolic murmur heard at the apex. There was marked dilatation, without sufficient compensatory hypertrophy. He improved with treatment. May 1, skin of legs burst and about 3 litres of fluid escaped. After this there was always more or less oozing from the skin. Died August 9, 1885.

Autopsy.—Body emaciated; hypostatic congestion. In abdominal cavity 2½ litres of straw-colored fluid. Intestines normal. In pericardium 1 litre of fluid. In both pleural cavities there was considerable fluid. Left lung much compressed by old pleuritic adhesions and distension

of pericardium. Aortic valves incompetent and mitral orifice much enlarged.

Weight of organs: Liver, 1,295 grammes; right kidney, 117 grammes; left kidney, 135 grammes; spleen, 155 grammes; heart, 585 grammes; left lung, 465 grammes; right lung, 1,160 grammes.

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ANEURISM OF THE AORTA.

Thoracic.

J. G.; aged 38 years; nativity, Ireland; admitted to Marine Hospital, Chicago, Ill., July 1, 1885; died September 2.

Had been troubled for some time with cough and more or less dyspnœa; asthmatic breathing; has had asthma for some years. These symptoms became more aggravated, and towards the end were accompanied by dysphagia and dysphonia. Has had for some time emphysema of the lungs.

Autopsy.—Peculiar barrel-shaped chest, caused by the emphysema. On opening the chest, firm adhesions found in right pleural cavity. Lungs œdematous, emphysematous, and scattered throughout were collections of miliary tubercles. Trachea and œsophagus flattened and compressed by an aneurismal tumor. Upper part of ascending and whole of transverse arch occupied by a large fusiform aneurism. The dilatation was principally on the superior surface, causing the arteria innominata to bend and obliterating its orifice. The wall of the sac where it pressed upon the trachea was quite thin and eroded. The cavity of the sac was filled with white fibrinous clots. Heart normal, filled with clots. Brain weighed 1,620 grammes, slightly congested. Inflammatory adhesion between dura mater and pia mater, along both sides of longitudinal fissure.

Case 2.

P. R. (mulatto); aged 35; nativity, Louisiana; admitted to Marine Hospital, Saint Louis, Mo., March 19, 1886; died April 6.

History.—Treated, as an out-patient, from February 20 to March 16, 1886, for bronchitis, a careful examination failing to reveal anything else. He had been troubled with the cough for several weeks prior to his first application, February 20. On admission an examination of the chest only showed mucous râles, more marked on the left. There was no tumor, bruit, or retardation of the radial pulse. The voice was husky and general condition good, and diagnosis of acute bronchitis was made. Shortly after admission attacks of dyspnœa began to occur at night. On April 3 had a very distressing attack, followed during the night and on each succeeding day by similar attacks, death occurring on the 6th, at 2 P. M. These attacks were usually very promptly (but temporarily) relieved by antispasmodics, and were at first thought to be asthmatic, but from their persistent recurrence and long continuance it was concluded that they were due to pressure on the trachea and pneumogastric nerves, probably exerted by an aneurism.

Autopsy (sixteen hours after death).—Body well nourished. *Rigor mortis.* Chest: A fusiform aneurism was found, involving the entire arch of the aorta, the posterior portion much more dilated than the anterior, though not distinctly sacculated. Posteriorly it was firmly adherent to

the adjacent tissues, and pressed upon the trachea and nerves. The internal and middle coats were ulcerated through in several places. Both lungs were congested, the left more so than the right, and considerable creamy pus was found in the trachea. No other organs examined.

CASE 3.

N. S.; aged 32 years; nativity, Denmark; admitted to the Marine Hospital, San Francisco, Cal., July 28, 1885; died August 21.

Autopsy (fourteen hours after death).—Chest: Pericardium contained 250 C. C. of clear fluid. Left pleural cavity contained about 1,000 C. C. of similar fluid. Left lung œdematous, congested, and smaller than normal. Right pleural cavity contained about 600 C. C. fluid. Old adhesions at apex of right lung; recent ones at the posterior and middle part. Heart much hypertrophied. Left ventricle dilated and full of blood, with some *ante-mortem* clots. Mitral valves were normal. Aortic valves were normal in structure, but too small to close the dilated orifice; they evidently allowed regurgitation. Valves of right heart were normal. The aorta was dilated from its origin to about the beginning of the descending portion of the arch. The point of greatest dilatation was about the origin of the innominate; the diameter here was about 6 centimetres. The vessel was flattened antero-posteriorly. The innominate also was dilated somewhat at its origin.

The dilated aorta was filled by an *ante-mortem* clot, extending into the ventricle. Its inner wall was quite smooth and glistening; no plaques could be felt anywhere.

NOTE.—Death evidently occurred by cardiac syncope, and the dilatation of the aorta was the primary lesion.

CASE 4.

Abdominal.

G. W.; aged 33 years; nativity, England; admitted to the Marine Hospital, Port Townsend, Wash., June 30, 1885; died July 6.

History.—When admitted he stated that about April 30, 1885, while at sea, he experienced a loss of appetite and suffered with difficulty of breathing, but never so severe as at present. Being unable to lie down, he was sitting in his bed, leaning forward all the time, trying to get what rest he could in this position, until death.

Autopsy (seventeen hours after death).—The symptoms and physical examination of the patient during life pointed so directly to the cause of the complaint that no portion of the body was examined except the course of the aorta. The thoracic aorta was normal in caliber, but lined quite profusely with calcareous plates, varying in size from a pin's head to three lines in diameter, and of irregular shape. At the side of the twelfth dorsal vertebra the aorta presented an enlargement measuring 4¼ inches in length and capable of holding probably 150 C. C. The bodies of the eleventh and twelfth dorsal and first lumbar vertebra were necrosed. The posterior wall of the enlargement was much thinned, and a small aperture was discovered at the side of the upper border of the first lumbar vertebra, corresponding to a spiculum of bone there found, and which had in all probability been the cause of the rupture. The abdominal cavity was filled with blood.

PNEUMONIA.

P. J. C.; born in Germany; aged 53; was admitted to the marine ward, Sisters' Hospital, Buffalo, N. Y., December 3, 1885; died December 6.

History.—He had then been sick one week. At various times he had suffered from asthma, and received treatment for it in the Marine Hospitals at Chicago and Buffalo. On examination there was found complete consolidation of the left lung. His breathing was most difficult, it being necessary to keep him in an almost upright position, while the number of respirations was 40 per minute, pulse 140, and temperature 40° C. He expectorated a large quantity of frothy mucus, very clear. He died December 6, of exhaustion.

Autopsy—The left lung was hepatized, the pleura adherent to it and the chest-wall. The bronchi of both lungs were partly filled with frothy mucus. The right lung slightly congested. The heart was fatty and hypertrophied. The pleura of the right lung was adherent in many places to the chest-wall and contained about 500 C. C. of serum. Both kidneys were enlarged, but showed no structural change. Liver and spleen normal. No other organs were examined.

CASE 2.

D. M.; aged 22; nativity, Ohio; admitted to Marine Hospital, Cincinnati, Ohio, January 12, 1886; died January 28.

History.—For the last two weeks before admission he had been having diarrhœa; four to six watery stools daily. He now has some soreness over the bowels, but does not complain of pain elsewhere. Pulse, 112; temperature, normal. Ordered rest and milk diet.

January 27.—Pulse, 118; temperature, 37½°; respiration, 40; P. M., pulse, 120; temperature, 37⅗°. Four stools; very restless all day.

January 28.—Died.

Autopsy—Body considerably emaciated. *Rigor mortis* well marked. Right lung, with the exception of a small part of the upper lobe, is found to be consolidated in various stages of hepatization. In about the center of the lower lobe is found an abscess of the size of large walnut, filled with pus and broken-down tissue. No pleural adhesions. Small intestines very much congested, but no ulcerations found. Other organs apparently healthy.

CASE 3.

H. H.; aged 23; nativity, Ohio; admitted to Marine Hospital, Cincinnati, Ohio, May 3, 1886; died May 8.

History.—When admitted patient only complained of very slight pain in left side. Had no cough; slight headache.

May 8.—Pulse, 140; temperature, 40°; died 5.45.

Autopsy.—Complete consolidation of left lung; red hepatization of the entire organ; considerable pleural adhesions, but none that were old. Spleen slightly enlarged. Other organs apparently normal.

CASE 4.

C. S.; aged 32; nativity, Sweden; admitted to Marine Hospital, Mobile, Ala., April 29, 1886; died May 1.

History.—Had been sick for several days, when, on Monday, April 26, while at sea, got a wetting in a hail storm. He had a chill and fever,

pains in chest, loss of appetite, profuse diarrhœa, and total loss of sleep, until date of admission to hospital.

Admitted about 2 P. M., April 29, 1886; thoroughly prostrated. Temperature, 40° C.; pulse, 126; respiration, 42; short and catching hacking cough, with scanty muco sanguinous expectoration. Total absence of respiratory murmur over middle and lower lobes of right lung; tongue, dry and brown; bowels, very loose, requiring the stool every thirty minutes; urine, free, but very dark in color. Active treatment adopted. Large blister applied over right lung; ant. et pot. tart., mercurous chloride, and morphia internally; milk and egg-nog, and opium and gallic acid suppositories for diarrhœa.

On the second day there was great dyspnœa. Crepitant rhonchus could be heard all over the ward, the patient crying out for breath and sleep. Hot flaxseed jackets, covered with oiled silk, were applied over entire thorax; carb. ammonia and hot milk and whisky punches given, with morphia hypodermically, but without avail, and at 12.50 A. M., May 1, the patient died from apnœa.

Autopsy. - *Rigor mortis;* hypostatic congestion posteriorly. Body that of a well-nourished man. On opening the thorax considerable straw-colored serum escaped; about 1,000 C. C. serum in thoracic cavity; fibrinous pleuritic adhesions throughout right pleura, also slightly in left pleura; right lung collapsed and bathed in yellow pus; lower lobe of left lung inflammatory; right lung color of liver tissue; heart, normal and perfectly healthy; liver, spleen, and pancreas normal; intestines distended with flatus, but perfectly healthy; brain and kidneys not examined.

CASE 5.

Valvular Disease of Heart.

D. S; aged 58 years; nativity, New York; admitted to Marine Hospital, San Francisco, December 3, 1885; died December 7.

Autopsy (eighteen hours after death).—Rigor mortis marked; body emaciated; extensive pneumonic deposits in and œdema of the lungs were found. No cavities. There were extensive fibrinous clots in both ventricles, which were attached to the internal walls of the heart and projected into both the aorta and pulmonary arteries, preventing the proper closure of their valves, which, added to the insufficiency of the mitral and aortic valves, was sufficient to account for death. The liver had undergone fatty degeneration.

CASE 6.

G. W. (negro); 30 years old; native of Virginia; was admitted to the Marine Hospital, Memphis, Tenn., October 22, 1885, for pneumonia of four days' duration. When admitted his pulse was 120, temperature, 38.3° C.; respiration, rapid and painful; dullness on percussing right chest, and respiratory murmur of right lung lacking. Coarse bronchial râles in left lung. Ordered iron, quinine, and digitalis; to be kept up all night.

October 23, 8.30 *a. m.*—Pulse, 132; temperature, 38.3° C.; respiration, rapid and superficial. Dry caps were applied to chest, and stimulants given. Death occurred at 10 o'clock A. M.

Autopsy (ten hours after death).—Rigor mortis. Body of muscular negro. Thoracic cavity: In the small space remaining between the enlarged lung and the right thoracic cavity was a quantity of recently

formed yellow membrane-like fibrin; this seemed to be an exudate from the pulmonary pleura, as there was no injection of the vessels of the costal pleura. All the lobes of the right lung in the stage of gray hepatization; weight 1,440 grammes. The left lung weighed 345 grammes, and excepting a slight increase of bronchial mucus, a calcareous nodule as large as a pea in the anterior surface of the lower lobe, and one old pleuritic adhesion, was normal. There was slight congestion of pericardial sac, and the formation of a small quantity of fibrinous lymph. A yellow fibrin clot, weighing 56 grammes, occupied the right auricle. Smaller clots, containing red corpuscles, in right and left ventricles, forming about columnæ carneæ. The cardiac valves were normal. Abdominal cavity: The liver was congested; weight 2,450 grammes; gall-bladder normal. The pancreas was normal; weight 92 grammes. The spleen was pultaceous; weight 570 grammes. The right kidney weighed 212 grammes; the left kidney 224 grammes; in each there was evidence of localized inflammation in cortical substance. The stomach and intestines were normal. The brain weighed 1,520 grammes; normal.

CASE 7.

H. C. R.; aged 40; native of Mississippi; white; was admitted to the Marine Hospital, Memphis, Tenn., on the afternoon of December 2, 1885. He complained of pain in his chest, shortness of breath, and weakness; had not been well for several days past. Physical examination showed pneumonic inflammation in each lung. Patient died on the morning of December 3, some eighteen hours after admission.

Autopsy (twelve hours post-mortem).—Rigor mortis. Body of a fairly well-nourished male. Thoracic cavity: The right lung was adherent to costal pleura by a few old adhesions. The lower lobe was inflamed, and on section there was considerable exudation of blood; weight, 637 grammes. The left lung was also attached to costal pleura by a few old fibrinous adhesions. The lobes were united by recent exudate. The upper lobe was congested; lower lobe in stage of gray hepatization; weight, 1,085 grammes. The heart was firmly contracted, and on the middle anterior surface of the right ventricle was an opaque pearl-colored plaque, the seat of a former circumscribed inflammation. All the cardiac valves were normal. Weight of heart, 297 grammes. Abdominal cavity: The liver was mottled yellowish-white and red; and besides this fatty degeneration there was congestion, due, probably, to the impeded venous circulation; weight, 3,204 grammes. The spleen was normal; weight, 509 grammes. The right kidney, on section, was streaked with yellow, evidencing a parenchymatous nephritis; weight, 205 grammes. The left kidney presented the same degeneration as the right; weight, 217 grammes. The brain presented no evidence of disease; weight, 1,532 grammes.

CASE 8.

Double.

G. F. (negro); aged 18 years; nativity, Tennessee; admitted to marine ward, City Hospital, Evansville, Ind., April 8, 1886; died April 13.

History.—Slight chill about three days before admission, followed by prostration and cough, with bloody sputum. Lower lobes of both lungs were consolidated. Temperature, 40° C.; respiration, 95; pulse, 150.

On the 10th he seemed much improved; but from noon on the 11th failed rapidly.

Autopsy.—Lower lobes of both lungs in state of red hepatization. Heart normal.

CASE 9.

Double.

L. W.; aged, 24 years; nativity, Georgia; admitted to Marine Hospital, New Orleans, La., February 26, 1886; died March 2.

Was extremely ill when admitted, suffering from pneumonia; temperature high and patient delirious. Death was sudden, heart-clot being immediate cause.

Autopsy (ten hours after death).—Body large, muscular, strongly built; abrasion over left side of chest, caused by application of blister; skull of ordinary thickness; membranes of brain congested; brain tissue œdematous and anæmic, ventricles dilated and filled with serous fluid. Heart of normal size; mitral valve contained a few recent vegetations; other valves healthy in appearance; left heart filled with large *ante-mortem* clot which extended into pulmonary arteries; entire upper and posterior part of left lung in state of red hepatization; middle and and lower lobes of right lung hepatized. Liver enlarged and very much congested. Both kidneys highly congested; typical pneumonic kidney. Intestines enormously distended with flatus; contraction of urethra at meatus, also 3½ inches lower down. Bladder apparently normal.

CASE 10.

Pulmonary Œdema (Purulent, Pericarditis, and Pleuritis).

P. H.; aged 22; colored; born in North Carolina; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., April 7, 1886; died April 15.

History.—On admission the patient was suffering from a severe attack of pulmonary œdema of both lungs, brought on by exposure four days previous. He had no medical attention up to the time of entering the hospital. His respirations were rapid and much embarrassed. He had pain and soreness over the entire chest anteriorly; expectoration of frothy serum, and by auscultation fine bubbling râles were heard diffused over both lungs. Temperature normal; marked asthenia. Under active treatment, however, the case seemed to remain at a stand-still till the third day, when the symptoms became worse; double pneumonitis supervened upon the œdema; consolidation rapidly took place; delirium and high fever followed; and the patient died on the morning of the eighth day after admission.

Autopsy (fifteen hours after death).—*Rigor mortis* well marked in the lower and absent in the upper extremities. No emaciation. The surface of the body was covered with pock-marks and cicatrices of syphilitic ulcers; also points of ecchymosis were observed upon the chest where the dry cups had been applied in the treatment of the case. On removing the sternum a slight escape of serum occurred, and several superficial points of suppuration were noticed upon the pericardium and pleuræ in the anterior mediastinum, together with flakes of lymph in considerable quantity. This was easily removed by a sponge, showing it to be of very recent origin. On opening the pericardium it was found to be distended with purulent serum, in which were floating flakes or

shreds of organized lymph. Both the visceral and parietal surfaces of the pericardium were covered with an exudation of film or lymph disposed in a series of layers, quite dense and closely adherent, uniformly reticulated upon the parietal surface, while the visceral surface resembled a sponge. Upon raising the heart from its sac, numerous long filaments of lymph and villous projections of the same material were found on its posterior surface, giving it a shaggy appearance. Just at the apex the visceral surface was clear, but the inflammation had affected the vessels beneath the membrane, giving rise to an arborescent redness of the part At the base of the heart the pericardium was found to be one inch (.25 metre) in thickness. The heart was normal in size, and in diastole. On opening the cavities they were found filled with large *ante* and *post mortem* clots. The valves were normal. Concentric hypertrophy was present in the left ventricle, and small *ante-mortem* clots were entangled within the meshes of the chordæ tendinæ. Lungs: The left lung was slightly adherent throughout, but firmly attached at the diaphragm and apex. On removing it purulent effusion was found, and large flakes of lymph, with some pus, were scattered over the upper surface of the diaphragm, giving it the same sponge-like appearance as that upon the surface of the heart. In many places the pleural sac had been destroyed by the ulcerative process. The lung was markedly œdematous at the apex, but the lower half of the upper lobe, and the whole of the lower lobe, were completely consolidated, and showed respectively the stages of red and gray hepatization. Points of emphysema were noticed at the apex, and, with this exception, the entire lung sank in water. The right lung was in much the same condition. Adhesions were found over the middle lobe posteriorly, but the remainder was free. It was somewhat smaller than the left, and the same purulent fluid was observed in the pleural cavity, with large shreds of lymph, green colored, scattered all over the surface of the lung, firmly attached thereto, and when closely examined showing points of decomposition and emitting an extremely offensive odor. The apex was œdematous with points of emphysema, while the remainder of the lung was in a state of red hepatization. Liver: The liver was very large, extending from the fifth cartilage to a point one inch above the umbilicus. It measured fifteen inches (.381 metre) in its transverse diameter, twelve inches (.305 metre) in its antero-posterior, and was about five inches (.127 metre) thick. It weighed eleven pounds, was very much congested, and firmly adherent posteriorly. Several points of a yellow discoloration were noticed upon its surface, but nothing was found that would in any way account for its unusual size. Kidneys, normal (no albumen in the urine). Spleen: The spleen was also very large, measuring nine inches (.229 metre) in length, six inches (.152 metre) in breadth, two inches (.051 metre) in thickness, and weighed fifteen ounces. It was slightly congested, and a deep curvature on its upper posterior aspect received a portion of the cardiac end of the stomach. Stomach: The stomach was dilated, and had been pushed upward by the liver and spleen, until it stood nearly vertical; it showed evidences of recent inflammation, and was filled with a muddy fluid. A small quantity of serum was present in the abdominal cavity, and the intestines in spots were injected and slightly inflamed.

NOTE.—A brief *résumé* of the essential points in this case is of diagnostic value, and enables us to determine what relation the one held to the other. A careful clinical study of the case, with its previous history, bears me out in saying that I believe it to be one primarily of acute pulmonary œdema, followed rapidly by acute pneumonia of both lungs, complicated by acute pleurisy, and that in turn followed by acute pericarditis. Exclusive of its traumatic origin, acute pericarditis is almost always sec-

ondary in its development to some other affection, and is a comparatively frequent concomitant of pleuritis and pneumonitis, by an extension of the inflammation from the pleura (in this case pleuræ), in consequence of the close proximity of the membranes. Pleuritis occurs quite constantly as a complication of pneumonia, and it is at once apparent how a severe or neglected case of pulmonary œdema could be instrumental in producing a pneumonia.

I do not believe that the other diseased organs, while abnormally developed, were in any way connected with this case as causative agents, but were simply coincident to the cause of the disease. R. P. M. A.

CASE 11.

J. B.; aged 30 years; nativity, Virginia; admitted to marine ward, Saint Vincent's Hospital, Norfolk, Va., April 6, 1886; died April 7.

History.—Patient was admitted to hospital in an unconscious condition, and was unable to give any history of his case. The captain, who accompanied him, stated that he had been sick for five or six days. On admission his temperature was 40° C., pulse 120, and respiration 45.

Autopsy.—Body well nourished. The right lung was found in a state of red hepatization. Upon making a section of it, a large quantity of serous fluid mixed with blood escaped. The cut surfaces presented a granular appearance, and were quite firm. The left lung presented a normal appearance. On the right side there were evidences of an old pleuritis. The heart was normal. Liver slightly enlarged. The gastric and intestinal mucous membranes were slightly congested. Other organs not examined.

CASE 12.

J. C.; aged 39; nativity, Ireland; admitted to Marine Hospital, Chicago, Ill., April 12, 1886; died April 15.

History.—Had a chill a few days prior to admission, followed by pain in left side of chest, and cough. When admitted seemed weak; pulse 114; temperature 38.8°; respiration 30, and rather labored; slight sordes on teeth; very little expectoration. Physical signs normal over right lung, except slight friction sound over upper lobe. Puerile respiration over upper lobe of left lung; over lower lobe tympanitic resonance, subcrepitant râle, bronchial respiration. Ordered large dose of quinia, followed by ammon. chlor. and digitalis, with small doses of morphia to allay pain, and mustard poultices to chest.

Autopsy.—Body well nourished; *rigor-mortis* marked; considerable mottling of surface; heart normal; colorless clot in left ventricle adherent to endocardium; small quantity of clear serum in pericardium. A few adhesions were found on the anterior surface of right lung, and a small number of emphysematous lobules on its surface and free edges. The entire left lung was solidified, with the exception of the free edge of the upper lobe. Base of lung and greater portion of upper lobe were in the stage of red hepatization; remainder of affected tissue was infiltrated with pus and broke down easily under the finger. The greater portion of the surface of this lung was adherent to the costal pleura. The abdominal viscera were normal.

CASE 13.

Cardiac Thrombosis.

T. C.; aged 48; nativity, Ireland; admitted to Marine Hospital, Chicago, Ill., February 12, 1886; died February 13.

History.—Patient had been sick but a few days; was exposed just before his illness to a storm of sleet and cold wind. When admitted he

presented the symptoms of advanced double pneumonia, and sank rapidly.

Autopsy.—Body very fat; face and extremities livid in color. On opening the thorax considerable clear serum was found in the pleural cavities. The lungs did not collapse, and bore the impression of the ribs. The greater portions of both lungs were in a condition of red hepatization; the lower portions were infiltrated with pus, the tissue breaking down easily under the finger. Both lungs also contained a considerable quantity of serum, which escaped freely from the cut surfaces. The anterior mediastinum was full of deposits of fat, almost covering the pericardial sac. The heart was covered with a deposit of fat which penetrated between the bundles of muscular fibers almost to the endocardial lining. The muscular substance of the heart was soft and flabby and of a yellowish-red color. The coronary arteries were atheromatous. The cavities of the heart were filled with soft dark clots. Entangled in the tendinous chords and columnæ carneæ of the left ventricle was a firm, light-colored, *ante-mortem* clot, which extended by a ribbon-like projection, 12 centimetres long, into the aorta. The mitral valve was insufficient and distorted, the result of a former endocarditis. The spleen was enlarged, congested, and softened, almost diffluent in some places. The liver, pitted on pressure, was enlarged, greasy to the touch, and showed the impression of the ribs. The edges were thick and round. The kidneys were intensely congested, blood flowing freely on section.

CASE 14.

Abscess of Kidney.

F. B.; born in Louisiana; aged 30 years; admitted to Marine Hospital, New Orleans, La., December 10, 1885; died December 17.

Autopsy (*eight hours after death*).—Body large; strongly built. *Rigor mortis.* Face strongly pock-marked; scar middle of penis about 1½ centimetres in diameter; skull very thin and asymmetrical. Dura mater normal; pia mater congested; brain œdematous; ventricles of brain dilated and filled with fluid; brain substance normal. Larynx and trachea covered with sticky mucus. Left pleura free from adhesions. Upper and posterior part of left lung in state of red hepatization; remainder of lung very œdematous. Right pleura strongly adherent throughout whole extent. The entire right lung in state of hepatization; in the lower lobe of right lung an abscess about as large as an orange was found, the cavity of which contained a quantity of dark-brownish fetid pus. Left lung weighed 800 grammes; right lung weighed 2,250 grammes. Heart of normal size, dilated; its tissue soft and pale. Aortic valve thickened; a few vegetations, with thickening of mitral valve. Pericardium thickened and adherent to pleura. Mucous membrane of stomach strongly congested; small intestine empty and contracted. Colon descended normally to upper border of pelvis, at which point it crossed at a right angle to right side, and passed down on right side of pelvis. This inferior transverse colon was bound down by bands of connective tissue, from an old inflammation, both at the point where it left the left side and at the point it touched the right; the portion between, about 7½ centimetres in length, was exceedingly distended with gas, which it is difficult to press out either way. Kidneys: Amyloid line between cortical and medullary substance entirely obliterated in places; abscess about size of pea in right kidney. Right kidney weighed 352 grammes; left weighed 416 grammes. Left kidney 17

centimetres in length and 10 centimetres greatest width. Liver enormously enlarged; amyloid and congested; weight of liver 3,250 grammes. Spleen of normal size; weight 400 grammes; tissue pale and excessively hard. Bladder normal. Spinal cord not examined.

CASE 15.

J. B. (negro); aged 16 years; nativity, Maryland; admitted to marine ward Saint Joseph's Hospital, Baltimore, Md., December 29, 1885; died December 30.

The patient gave a history of six weeks' illness, beginning with severe cold. Was on board a boat away from medical assistance until he was sent to hospital. When admitted was emaciated. Respiration very hurried; pulse rapid, but out of proportion to respiration. Temperature five degrees above normal. Auscultation showed absence of respiration over right lung; harsh puerile respiratory sound in opposite side. Vocal fremitus entirely absent on right side. Percussion note flat and dull on right side.

The patient had very little pain, except when coughing. Expectorated matter was thick, whitish yellow, and somewhat resembling pus. Patient grew restless; finally tossed about; delirium ensuing, the patient sank rapidly, expiring about noon December 30.

Autopsy (ten hours after death).—Rigor mortis moderate. Body emaciated. Pressure on the chest-wall caused frothy, bloody fluid to escape from nostrils and mouth. Thoracic cavity. The right lung found solidified; at its apex there was a large emphysematous bleb. Cutting into its substance it was found that gray hepatization was present. The left lung enlarged very much; intensely congested; when cut, dark blood oozed freely; a piece placed in water sunk. Heart tissues normal, but right auricle distended with dark blood. Three small ulcerated surfaces were found in the upper half of the ileum. Kidneys and other organs normal.

CASE 16.

P. C. N.; aged 31 years; born in Denmark; was admitted to marine ward German Hospital, Philadelphia, Pa., December 14, 1885, with well-marked symptoms of pneumonia of left lung, with consolidation of lower lobe. Temperature 39.4° C.; pulse 105. ℞: Liq. ammon. acetas 8 C. C., syr. pruni virg. 4 C. C., every two hours. Was seen by the reporter next morning. Diagnosis confirmed. Tongue dry; temperature high. ℞: ol. terebinthin 6 C. C., quinine sulphate .13 gramme, every two hours. Milk punch freely, and expectorant continued. Soft diet, containing concentrated nutriment, was ordered, and turpentine stupes applied to sides of chest. Treatment was continued without material variation until December 19. He was then given steam inhalations to relieve excessive dryness of throat, and ammon. muriat. and carbonate was added to his medicine, with sponging with dilute alcohol. December 20, quinine, whisky, and digitalis were increased. Whisky was also administered by rectum, as he was evidently sinking. He died at 9.30 P. M. December 21, 1885.

Autopsy (at 3.30 p. m. December 22).—Rigor mortis well marked; body much emaciated. Hypostatic congestion moderate. Chest: Pleural adhesions on left side old and firm; slight adhesion on right side, lower portion. Pericardial fluid measured 90 C. C., with some evidence of mild pericarditis. Left lung hepatized throughout with pus;

infiltration in lower lobe; gray hepatization. Right lung hepatized in lower lobe; slightly crepitant in upper lobe only. Intestines: Upper colon distended with gas; small intestines contracted and inflamed. Descending colon diminished in size to about one-third normal. Kidneys nearly normal. Liver normal. There was some peritonitis. Liver weighed 1,590 grammes; lungs, 1,600 grammes; spleen, 170 grammes; kidneys, 320 grammes; heart, 280 grammes.

CASE 17.

W. J. W.; aged 45 years; born in Georgia; admitted to Marine Hospital, Boston, Mass., October 7, and died October 28, 1885.

History.—When admitted the patient gave only a vague history of recurring "chills" for some days prior to his admission, and it was at first thought to be a malarial fever. In a few days he began to develop a double pneumonia. It appears that he was under indictment for a murderous assault on a seaman during the voyage to this port, and the trial was pending when he was admitted. The issue of the affair weighed greatly on his mind, and he anticipated conviction and a long sentence in prison. Rather than suffer this he preferred to die, and often expressed his desire that the present sickness would end his life. It was imposible to lift him out of this despondency, and thus active mental assistance in promoting recovery was wanting, and he gradually sank until his death.

Autopsy.—Body poorly nourished, but muscles well developed; evidently a person of "spare habit." Both lungs congested. Pleura adherent in several places, indicative of successive attacks of pleuritis. Section of the substance of the lung tissue gave signs of old patches of inflammatory exudation, partly broken down. Marked friability and granular surface on exposing the tissues was noted. Heart normal. Liver and spleen enlarged, and slightly congested. Kidneys normal, Brain not examined.

CASE 18.

H. H. (negro); aged 37; nativity, Virginia; admitted to Marine Hospital, Memphis, Tenn., March 25, 1886; died March 29.

History.—This patient was ill for a week before his admission, but remained at home without treatment until so much worse that he could stay there no longer. Physical examination showed double pneumonia; treatment stimulative. Death occurred at 3.30 o'clock on the morning of March 29.

Autopsy (twelve hours post mortem).—Rigor mortis. The blood-vessels of the cerebral membrane were greatly congested; the brain was normal; weighed 1,420 grammes. The right lung was adherent by well-formed pleuritic adhesions; the upper, middle, and lower lobes were attached by recent yellow fibrinous exudate. The entire lung, excepting its free internal border, which was normal in appearance, was in a state of gray hepatization; weight 1,415 grammes. The left lung was also adherent by old exudations; the lobes were in the stage of gray hepatization, the free internal border of this lung being normal, as in the right lung; weight 1,292 grammes. The heart was large and distended; the right auricle and ventricle were not only filled with black coagulated blood, but also a large yellow clot. Removing the latter, the heart weighed 426 grammes. The liver weighed 2,610 grammes; the blood-vessels were greatly distended, as a result of impeded circulation; the gland was otherwise normal. The spleen

weighed 360 grammes; one section was mottled with faint gray spots; it was adherent to the parietal peritoneum, and the capsule was thickened at the external border. The right kidney weighed 225 grammes; fatty degeneration about the pyramids. The left kidney weighed 240 grammes; also slight fatty degeneration. The suprarenal capsules were small, soft, and torn in removal. The pancreas weighed 115 grammes; was normal. The intestines and bladder were normal.

CASE 19.

J. T. R.; age, 27; a native of Denmark; admitted to Marine Hospital, Wilmington, N. C., March 23, 1886.

History.—He could not speak English, and would not answer the questions of his own countrymen. All he would say was that he had a pain in his chest. Respiration rapid and shallow—36 per minute; pulse, 130, weak. Over right apex were dullness and subcrepitant râles. He had been sick ten or eleven days. Temperature on admission, 38.5° C.; P. M., 40. Temperature same on 24th; 25th, evening, temperature 38° C., and seemed better in every respect. 26th, temperature 40° C. in morning and 40.2° C. in evening. Died at 9 P. M. Delirium was constant.

Autopsy.—Abdominal organs normal; mesenteric glands enlarged; right upper lobe undergoing resolution. Weight of organs: Spleen, 280 grammes; liver, 1,715 grammes; left lung, 644 grammes; right, 1,015 grammes; right kidney, 165 grammes; left, 190 grammes; heart, 284 grammes; pancreas, 145 grammes; brain, 1,310 grammes.

CASE 20.

J. S.; aged 44 years; nativity, Germany; admitted to the marine ward, Saint Joseph's Hospital, Baltimore, Md., March 8, 1886; died March 23.

History.—Four days before applying for relief the patient, after severe exposure, contracted cold, followed by pain in the chest, dyspnœa, cough, and fever. Careful examination by percussion showed marked dullness over the whole of the right lung, more marked posteriorly. The upper lobe of the left seemed resonant, with slight dullness at apex. Crepitant râles were heard over base of both lungs. There was no expectoration, the patient trying to repress the cough on account of the pain it caused. Temperature, 39° C.; pulse, 105; respiration, 28. The patient was of small stature, poorly nurtured, and of dissipated habits.

A diagnosis of pneumonia was made, mustard poultices applied to chest, expectorant mixture of seneka and muriate of ammonia with pulv. Doveri at night; an enema, with milk diet and milk punch, was ordered. Three days after a copious rusty sputa appeared, with profuse perspiration, giving marked relief and comfort to the patient. The case seemed progressing favorably when peritonitis set in, from which the patient died seventeen days after admission.

Autopsy (twenty hours after death).—*Rigor mortis* moderately marked. Body much emaciated. Scar in groin from bubo; also scars, probably syphilitic, over tibia. Abdomen distended. In the pleural cavity were found about 250 C. C. of serous fluid. The posterior portion of the right lung was adherent to the pleura, the result of recent inflammation. The covering of the left lung was in a state of red hepatization. Bronchi and air-cells filled with rusty-colored secretion. The left lung was smaller than normal. No cavities or destruction of tissue was found. The heart

was large, flabby, and of a dull color. The right auricle and ventricle were filled with clotted blood; valves apparently normal. The abdominal cavity was filled with serum, and the intestines inflated; the stomach empty and collapsed. Marked inflammation of peritoneum with adhesions to intestines in right lumbar region. The intestines were small, of a pale color, but only in the vicinity of the ileocæcal valve showed signs of inflammation. The liver was pale but normal in size. The gall-bladder contained a small amount of dark bile; other organs examined apparently normal.

CASE 21.

Aneurism Thoracic Aorta. Cerebral Apoplexy. Psammomata Choroid Plexus. Acute Nephritis.

C. F.; aged, 42; nativity, Illinois; admitted to Marine Hospital, Memphis, Tenn., February 3, 1886; died February 15.

The patient stated he was taken ill on the night of January 31 with fever and a severe pain in the right chest; he remained in his bunk on the vessel until admitted to the hospital. The physical signs evidenced pneumonia of the right lung, and aneurysmal bruit over the thoracic aorta just superior to the cardiac orifice. The patient was given iron, quinine, stimulants, and milk diet. During the course of the disease an acute nephritis was developed. The temperature chart and sphygmographic tracings of the right and left radial arteries are herewith appended. February 14 the patient became unconscious in the evening; continuing unconscious through the 15th, and dying at half past eleven that night.

Autopsy (eighteen hours post mortem).—Rigor mortis established. Considerable bloody fluid escaped when the calvarium was removed. All the cerebral blood-vessels were greatly congested. A clot was found on the left side in the region of the Sylvian fissure, between the dura and pia mater; it was not well organized, but seemed *ante-mortem* The brain itself was normal, weighing 1,362 grammes; but in the choroid plexus of each lateral ventricle, in the region of the middle cornu, was a small white reniform body, about two centimetres in circumference. They did not seem to encroach upon the adjacent regions, and their position would have been modified by the vascularity of the plexus. They contained sabulous matter, and were evidently psammoma. Dissolving out the oily matter with ether, and the calcareous salts with hydrochloric acid, a microscopic section appeared composed of numerous large round cells; each cell consisting of numerous laminæ surrounding several smaller round cells. A typical delineation of the specimen may be found in figure 139 B of Bilbroth's Surgical Pathology.

An excellent representation of a similar tumor may be found in plate 7, figure 3, of the tenth fasciculus of Matthew Baille's Morbid Anatomy (London, 1812); who says (page 223) that these tumors (which he calls tubercles) are very rare. As I have not found another case in the accessible literature of cerebral neoplasms, this statement seems justifiable. (In the Annual Report Marine Hospital Service, 1883, page 220, are the report and drawing of a polycystic psammoma; the microscope revealed a number of highly refractive, small, round bodies. These were fatty and calcereous degeneration of the hyaline connective tissue and large round cells.)

Grasset (Maladies du Système Nerveux, page 302, quoted by A. McL. Hamilton, Nervous Diseases, &c.) has proposed the name *sarcoma*

angiolithique in lieu of Virchow's term *psammoma* (incorrectly spelled psammona by Billroth, *op. cit.*). While the former is undoubtedly more correct, custom has adopted the latter.

Thoracic cavity: The right lung was attached to the costal pleural by several old pleuritic adhesions; it weighed 800 grammes; the upper lobe was in the stage of red hepatization; tubercles were found in it and in the middle and lower lobes. The left lung was attached to the costal pleura from the sixth to the seventh rib by a single old fibrinous band one inch in width; the lung was normal, and weighed 389 grammes. The pericardial sac was normal. The heart weighed 577 grammes; the aneurysmal bruit was caused by a dilated ascending aorta, measuring 12 centimetres in circumference; the dilatation included the first portion of the arch. The aorta was atheromatous, almost a ring of calcareous material being deposited just above the aortic semilunar valves. The latter were thickened, and slightly insufficient when tested by water. The left ventricle was hypertrophied. The other cardiac valves were normal.

The sphygmograms herewith appended are of great interest in the light of the pathological condition found at the necropsy. The *ante-mortem* examination evidenced an aneurysm of the aorta, and yet, instead of having the usual rounded apex and irregular descending wave, there was a markedly early predicrotic rise and an acute apex. This was attributed to the increased action of the heart consequent upon the disease, but the necropsy showed that there was a regurgitation, with a decided ventricular compensatory hypertrophy; and hence the character of the curve.

Abdominal cavity: The liver was fatty; weighed 3,392 grammes. The omentum was firmly attached to the capsule of the spleen, the consequence of an old hypertrophy, which was indicated by the greatly thickened capsule. The spleen was fissured anteriorly; weighed 989 grammes. The right kidney weighed 184 grammes; the left, 190 grammes. Each kidney was greatly congested in both the cortical and pyramidal substance. The left supra-renal capsule weighed 14 grammes. The right was torn in removal. The pancreas, intestines, and bladder were normal.

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ACUTE PNEUMONIC PHTHISIS.

Double Ureter of Right Side.

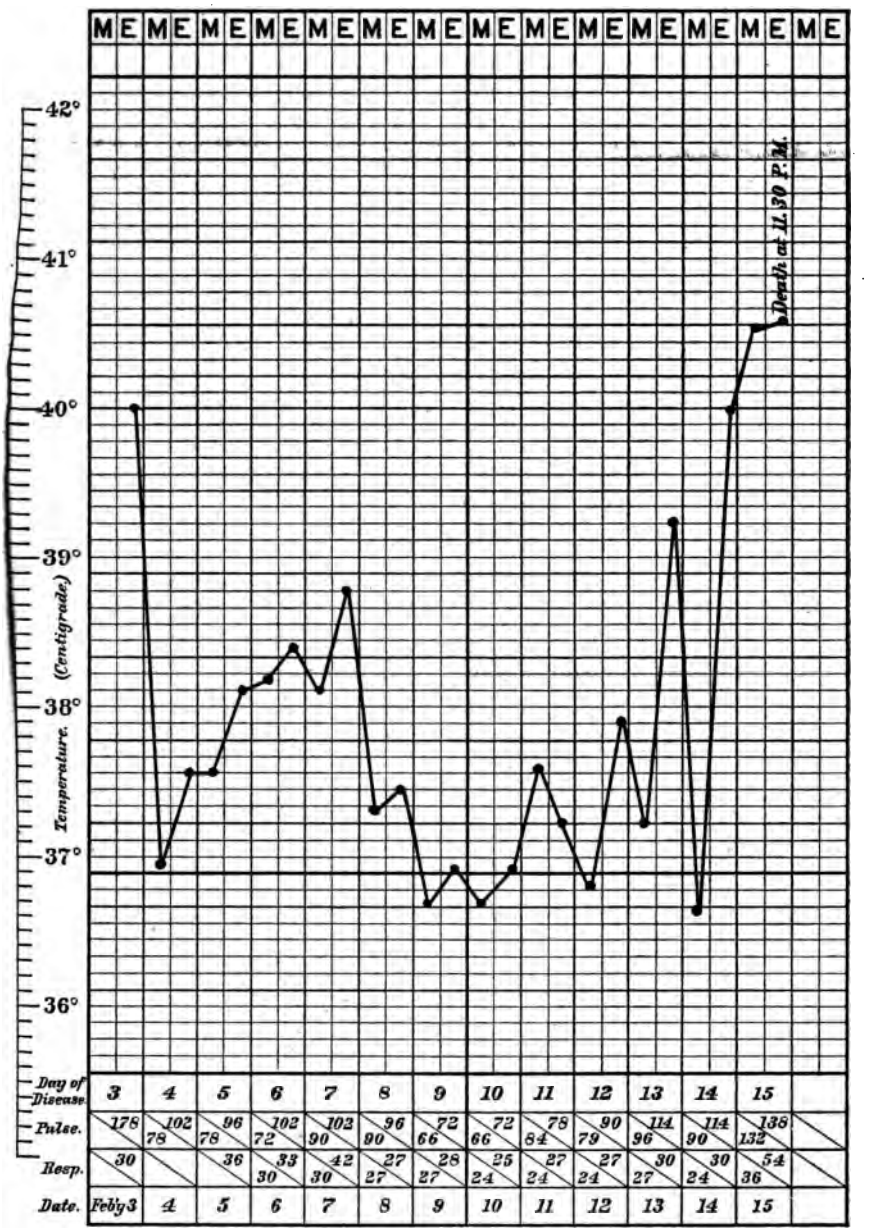
J. G.; aged 33 years; nativity, Mississippi; admitted to Marine Hospital, New Orleans, La., January 20, 1886; died February 6.

History of an attack of pneumonia eight weeks before entering hospital. After entering had fevers, rigors, &c.

Autopsy (forty-two hours after death).—Body small and emaciated. Left pleural cavity contained about 200 C. C. serous fluid. Right pleura recently inflamed and adherent. Pericardium thickened, adherent, and contained about 250 C. C. serous fluid. Heart of normal size; its tissue pale; valves soft and flabby. An *ante-mortem* clot filled the right ventricle, and extended for some distance into pulmonary aorta. Left lung very œdematous, and the lower back portion of upper lobe infiltrated with tubercle. Middle lobe of right lung contained a cavity about the size of an orange. Bronchial tubes thickened and inflamed throughout most of right lung. Liver and spleen presented nothing worthy of note. Left kidney lobulated; its ureter bifurcated coming together about two

CLINICAL CHART AND SPHYMOGRAPHIC TRACINGS.

CASE OF C. F. COSTER.



Right radial artery. Pressure, 30 grammes.



Left radial artery. Pressure, 40 grammes.

inches from pelvis. Right kidney also lobulated, and passing from it two large and separate ureters, which joined each other five inches from pelvis of kidney, entering bladder as a single tube. The capsule peels off easily. Line between cortical and medullary substance distinct and normal. Muscular coat of intestines atrophied, and the intestinal tube contracted. Bladder and urethra normal. Brain not examined.

CASE 2.

A. S.; aged 43; native of Sweden; was admitted to marine ward, Saint Mary's Hospital, Galveston, Tex., January 27, 1886. Diagnosis: "Acute bronchitis."

History.—Had never been ill prior to the very severe freeze along the Gulf coast from the 10th to the 20th of January, 1886, during which time he was continuously exposed, and contracted his cold. Examination gave evidence of bronchitis. No percussion note of consolidation. Moist râles of bronchitis pretty general over chest. During first week of treatment these râles cleared up and at length were confined to the upper lobe, the left being most affected. Normal respiratory sounds throughout the lower portions of lung. During the second week of treatment there was a decided advance of the disease. Dullness became evident over both apices. Dyspnœa, with harassing cough and continued high temperature, ranging from 37° C. to 38° C., indicated the graver lesion of "miliary tuberculosis." During February and March the entire lung substance was invaded. Died April 2, 1886, at 1.30 P. M.

Autopsy (twenty hours after death).—Marked emaciation and cadaveric rigidity. Effects of non-aeration of the blood very marked, the entire cutaneous surface being a livid blue. Lungs alone examined. Pleurae obliterated as membranes. Lungs *in situ* filled the chest, and, but for their mottling of purplish black and yellow, seemed normal. On section the yellow spots proved to be dilated air-vesicles, and the dark ones were deposits of carbon. The apices were removed, the tissue cutting without harshness. The entire lung had a nodular feel and was filled with gray tubercles. Only at the apex of the left lung was there any degeneration into yellow masses, and here there were two about the size of marbles, of a cheesy consistence, and one, just broken down into pus, which, on being opened up, showed a cavity as large as a filbert.

CASE 3.

R. M.; aged 22; born in Texas; was admitted to Marine Hospital, Louisville, Ky., May 27, 1886. Said he had been sick two months, but was too ill to give a clear account of himself. Temperature, 40.25°; pulse, 108; respiration, 36. Stimulants for the first twelve hours, increased later, with tr. nucis vom. and carbonate of ammonia. Temperature and pulse remained about the same; respiration on the 29th was 46. Died at 8.30 A. M. on the 30th.

Autopsy (at 3 p. m.).—Very little *rigor mortis*. Heart normal. Left lung externally of deep red color. An immense number of small nodules could be seen, and felt by running the finger over the surface. A dirty, frothy exudate followed upon section, and the same nodular masses were present all through the mass of the lung. Posteriorly at the upper part of the lower lobe was a small spot of cheesy matter advanced to softening, that oozed out upon pressure, leaving a cavity. The right lung was bound to the thoracic wall nearly throughout. It was shrunken, hard, filled with cheesy matter, similar to, but larger

than those in the left. The liver was greatly enlarged, overlapping the spleen. It was palish yellow externally, and decidedly fatty in character. Nothing unusual about the other organs, except that the peritoneal glands near the duodenum were enlarged and caseous.

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CHRONIC PNEUMONIC PHTHISIS.

C. J.; aged 33; nativity, Pennsylvania; admitted to marine ward, German Hospital, Philadelphia, Pa., October 29, 1885, with bronchitis acute. Diagnosis subsequently changed to acute phthisis, with tubercular ulceration of larynx.

History.—The most marked symptom in his case was aphonia, due to tubercular ulceration of larynx. The laryngoscope showed an ulcer at arytenoid cartilage, on right side, with a presumption of other ulceration not visible. The sputa and cough and temperature variations were characteristic of tubercular phthisis. His treatment consisted in tonic and anodyne medication, with nutritious food, and numerous local applications to larynx, and atomized inhalations. Iodoform and petroleum were continuously given in pill form, and egg-nog without limit. He gradually failed; had daily attacks of spasmodic cough, which seemed frequently to threaten suffocation. On January 10 he had a severe attack of coughing, with great dyspnœa and symptoms of pneumothorax, which terminated fatally on the evening of January 11, 1885.

Autopsy (3.30 *p. m.*, *January* 12, 1886).—Body extremely emaciated; feet and ankles œdematous; serous fluid above normal in quantity in peritoneum, pericardium, and pleurae. Heart normal in texture and size, with large *ante-mortem* clot in right auricle, and *post-mortem* clot in right ventricle and left auricle. No clot in left ventricle. Right lung totally collapsed, and right pleural cavity filled with air, which had gained admission through a perforating abscess on anterior surface of upper lobe. Right lung presented on section a pultaceous mass made up of necrosed lung tissue, abscesses, and cheesy tubercles. Left lung was hypertrophied, and contained numerous abscesses and cheesy masses, and was slightly crepitant in localized patches of both lobes. Right lung showed no crepitation anywhere.

CASE 2.

W. H. (negro); aged 21 years; nativity, Pennsylvania; admitted to the marine ward, City Hospital, Evansville, Ind., April 4, 1885; died July 13.

History.—Had been sick only a few days; dullness over lower lobe of left lung and crepitant râles. These physical signs extended to upper lobe of left lung; later, partial resolution; but cough and abundant expectoration continued, with progressive emaciation and loss of strength.

Autopsy.—Four hundred C. C. serum removed from left pleural cavity; 40 C. C. serum in pericardial sac; left lung dark red on surface; section showed many small cavities filled with pus; very little air could be squeezed from cut surfaces, but abundant serum; right lung congested; heart, liver, kidneys, spleen, normal.

CASE 3.

G. R.; aged 39 years; nativity, Portugal; admitted to Marine Hospital, San Francisco, Cal., December 5, 1885; died December 6.

Autopsy showed total disorganization of the interior of the larynx, with erosion of cartilages and tubercular deposits, and a perforation of the thyroid cartilage opposite the ventricle. Through this aperture air had escaped, causing some emphysema beneath the deeper cervical fasciæ. The lungs were extensively diseased, containing many cavities in both apices, and were generally infiltrated with tubercular deposit.

CASE 4.

R.W. (negro); aged 25 years; nativity, Kentucky; admitted to marine ward, City Hospital, Evansville, Ind., January 26, 1886; died February 9.

History.—Severe cough for several months. Voice husky; bronchial respiration and dullness over upper lobe of each lung; constant pain through chest; sputum scanty, thick, no blood. Declined rapidly after entrance to hospital.

Autopsy.—Many adhesions in left pleural cavity; none on right side. Small cicatrix at apex of right lung. This lung appeared contracted; slaty hue externally and on section. Air scanty, but abundant clear fluid. Left lung: Dark-red color; section showed abundant dark-red fluid and whitish plugs on pressure; very little air. Heart anæmic; walls thin; valves normal. Liver, spleen, and kidneys normal.

CASE 5.

J. McC.; born in Ireland; aged 28; admitted to the marine ward, Sisters' Hospital, Buffalo, N. Y., October 17, 1885; died April 11, 1886.

Autopsy.—Body very much emaciated. The pleura was thickened and adherent over the whole surface of the right lung to the costal pleura. The apex of this lung was solidified. In the center of the upper lobe was a pus cavity containing about 30 C.C. of thick pus; the rest of the lung tissue soft and readily broken down, and containing minute cavities of pus. The left lung was much contracted and hardened, but no cavities. Heart hypertrophied, especially the left side; valves normal. Liver enlarged but otherwise healthy. Kidneys and spleen appeared normal.

CASE 6.

J. McC.; aged 29; born in Pennsylvania; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., May 12, 1886, suffering from phthisis pulmonalis, and pneumonia of the lower lobe of the left lung; died May 15.

Autopsy.—Considerable emaciation; spots of ecchymosis on breast and arms. *Rigor mortis* absent. Tympanites intestinalis. In opening the thorax firm pleuritic adhesions were found extending over the upper surface of both lungs, being most marked anteriorly; while considerable effusion was found in the pleural cavities. The heart was in diastole, and filled with *ante* and *post mortem* clots; its veins were all engorged, and some pericarditis had existed; the valves were normal, and a slight fatty degeneration of the muscular structure of the heart was present. The left lung was found to be emphysematous throughout the upper lobe, while the lower lobe was congested, œdematous, and in the stage of red hepatization; the base of the lung was slightly discolored. The right lung was very large, œdematous throughout, filled with tubercles, small collections of pus, with a large pus cavity at the apex. All the other organs were slightly enlarged, but otherwise normal.

CASE 7.

L. J. (colored); aged 21; born in Virginia; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., January 13, 1886; died April 4.

History.—When admitted the patient was suffering from an acute attack of bronchitis and rheumatism, brought on by exposure upon a wreck the week previous. Prior to this time his health had always been good; he denied ever having venereal disease, though an eruption upon the skin was present, and there was no family history of a tubercular diathesis. The bronchitis and rheumatism under appropriate treatment disappeared in a few days, leaving a slight cough and some dyspnœa. The lungs were now carefully examined, and slight dullness was detected at the apex of the left lung anteriorly. The case nevertheless progressed favorably until February 9, when the rheumatism suddenly returned complicated by rheumatic iritis and lobar pneumonia of the lower lobe of the right lung. This unfavorable turn in the case was attributable to the exposure consequent upon a trip to the city taken against advice. As in the first attack the rheumatism soon disappeared, and the iritis rapidly improved, but the pneumonitis increased, invading the middle lobe of the right lung, and placing the patient in a critical condition. At the same time it was also noticed that the dullness in the apex of the left lung had increased, consolidation was taking place, several severe hemorrhages occurred, marked debility supervened, night sweats became frequent, hectic fever was constantly present, cavernous respirations finally were detected, and a cavity was diagnosed about the 1st of March, so rapid had been the course of the tubercular disease. The pneumonitis advanced through its several stages to that of gray hepatization. The patient gradually became worse. On April 1 pulmonary œdema occurred, which was relieved by dry cups and counter irritation.

April 2.—Temperature, 39° C.; patient very low. Dullness on percussion over the whole of the right and apex of the left lung posteriorly. Tubular breathing and subcrepitant râles over middle and lower lobes of the right lung; normal at apex. Same over left lung, except that moist râles are heard near the apex.

April 3.—Patient sinking; temperature, 39° C.; great difficulty in breathing; cyanosis.

April 4.—Patient died at half-past ten in the forenoon.

Autopsy April 5 (*twenty-four hours after death*).—Emaciation slight; eruption previously referred to very noticeable, particularly on the lower extremities. *Rigor mortis* well marked. On opening the thorax the left lung was found to be pressed slightly upward and outward by the presence of a considerable quantity of pleuritic effusion. The right pleural cavity also contained a large amount of clear serum of recent formation. Pericardium normal. Heart: The apex of the heart was only half an inch below the nipple. It was normal in size, had a slight amount of fat upon its surface, and was in diastole. On examining the cavities they were found filled with dense black *post-mortem* clots. The valves were all intact, though evidence of a recent endocarditis existed, and small, partially organized vegetations were observed upon the free margin of the mitral valves. The left lung was firmly adherent in the upper portion to the chest-walls, nodular to the touch, firmly contracted, and dense at the apex, with a cicatrix on its anterior aspect 0.051 metre in length (two inches). The entire lung was very œdematous throughout, and one section allowed a large escape of serum. A cavity

was found at the apex the size of a hen's egg, while the entire upper lobe was infiltrated with tuberculous deposit and pus cavities. The lower lobe was very emphysematous, but gave no evidence of tubercular invasion. The right lung was firmly adherent at the base to the diaphragm, and required force in separating it. The upper lobe appeared to be healthy, but the two lower lobes were diseased. Collections of pus and small pulmonary abscesses were scattered over the surface, and situated in the deeper portions of the lung. One point of gangrene was noticed at the base, and the lung tissue, when divided, allowed a purulent fluid to escape freely. The entire lung would float in water, but when the upper lobe was removed it sank immediately. The bronchial glands were much enlarged. Slight effusion in the peritoneal cavity. The ileum was of a rather pink hue, showing slight inflammation. Liver normal. Gall-bladder distended. Spleen normal. Left kidney small, pale, flabby, and capsule adherent; structure normal. Right kidney enlarged, subperitoneal effusion on its superior extremity, capsule adherent, and several points of cicatricial contraction observed throughout the cortical substance.

CASE 8.

S. H.; aged 53; nativity, Norway; admitted to Marine Hospital, Chicago, Ill., December 28, 1884; died October 11, 1885.

On admission patient found to have tuberculous deposits in apex of each lung. The disease proved to be chronic, making slow but sure progress. About July, 1885, he began to suffer from tabes mesenterica, and about two months before death tubercular meningitis supervened.

Autopsy.—Firm adhesions throughout entire surfaces of both pleuræ. Lungs very dark-colored, contracted, and filled with caseous deposits; several small cavities also found. Peritoneum presented appearances of long-continued chronic inflammation, with some localized spots of acute inflammatory action. Omentum very dark. Mesenteric glands engorged and infiltrated with tubercular deposit. Some of the glands in an advanced state of suppuration. Evidences of inflammation found in meninges of brain; effusions of coagulable lymph, deposits of miliary tubercles. Ventricles distended with fluids.

CASE 9.

Multiple Injury.

J. L.; aged 53; nativity, Canada; admitted to Marine Hospital, Chicago, Ill., November 12, 1885. Died November 18. Has been suffering for some time from chronic pneumonic phthisis. On the night of November 17, 1885, while laboring under an attack of temporary aberration of the mind, he jumped from a window of the fifth ward (third story) to the ground, and sustained injuries from the effects of which he died.

Autopsy.—Fracture of manubrium of sternum, fracture of nine superior ribs on right side; injury of right lung near apex; rupture of internal and middle coats of aorta to the extent of over half an inch; rupture of right mammary artery. Small deposits of tubercles scattered through both lungs; rupture of capsule of spleen; extensive ecchymosis of great omentum and coats of small intestine.

CASE 10.

W. P.; aged 48; born in Pennsylvania; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., May 13, and died May 15, 1886.

History.—The patient was brought to the hospital in the ambulance, in a semi-unconscious condition, suffering from phthisis pulmonalis and asthenia. Despite the most active treatment he failed rapidly and died on the second day after admission.

Autopsy.—Rigor mortis absent. Great emaciation. Slight pleuritic adhesions were noticed in the anterior mediastinum, becoming very firm at the apex of each lung, where considerable force was necessary in breaking them up. The heart was normal, its surface covered with fat, and a slight increase in the amount of the pericardial fluid was noticed. The aorta presented evidences of a chronic inflammation, and all the arteries were found to be more or less in a state of calcareous degeneration. Lungs: The right lung was slightly congested and œdematous throughout, with a small cavity at the apex posteriorly. The left lung was infiltrated with tuberculous deposits. A cavity was present at the apex, and small points or collections of pus were found in the lower lobe. Liver and spleen normal. The stomach was somewhat dilated, and the kidneys slightly enlarged and moderately congested. Some peritoneal adhesions were also noticed upon the intestines.

CASE 11.

A. S.; age 37; born in Austria; admitted to the Marine Hospital at New Orleans September 9, 1885; died September 14.

Very thin and weak on admission; voice hoarse. Bronchial breathing and râles over both lungs; more marked above. Cavernous respiration over the upper part of left chest

Autopsy (*fourteen hours after death*).—Except the lower lobe of the right lung, both lungs were thickly studded with tubercles, and greatly congested. The lobe mentioned was healthy. The upper lobe of the left lung contained two small cavities. The larynx above the vocal chords was deeply ulcerated, especially the epiglottis, little of which was left except the upper edge. The lett ventricle (of the larynx) was eaten out more deeply than the right. The edges of the vocal chords were not implicated. The other organs were normal, no tubercle being found in them.

CASE 12.

W. L.; aged 20; nativity Louisiana; admitted to the Marine Hospital at New Orleans, La., July 6, 1885; died August 23.

Autopsy (*four hours after death*).—*Rigor mortis* slight; much emaciated; abdominal cavity contained about 500 C. C. of bloody serum; mesenteric glands much enlarged and some undergoing caseous degeneration. Lungs: Pleuræ of both lungs adherent, their surfaces being covered by large quantities of feebly-exuded lymph; the upper lobes of both lungs and the middle lobe of the right were each occupied almost entirely by one large cavity, with thin walls of lung tissue lined by a thick pyogenic membrane, and held apart by a net-work of bronchial tubes and blood-vessels. Neither cavity contained much pus. The lower lobes of both lungs contained several small cavities of recent formation, filled with pus, and thickly disseminated masses of tubercles undergoing degeneration. The trachea, right and left bronchi and their subdivisions showed numerous small ulcerations of mucous membrane, the smaller bronchi being much inflamed. The larynx contained several ulcerations, and the vocal cords were much swollen and infiltrated. The lower portion of the ileum contained a large number of circular

tubercular ulcers, and the four lower patches of Peyer were enlarged, thickened, and beginning to ulcerate. All other organs normal.

NOTE.—Two days before death, had diarrhœa, with involuntary evacuations of bowels.

CASE 13.

P. P.; aged 21 years; born in California (half-breed Indian); admitted to Marine Hospital, Boston, Mass., September 4, 1885, and died December 18.

History.—When admitted he was suffering from pneumonia, which assumed a chronic form and the patient never rallied, keeping his bed from the day of admission to his decease. He had previously been treated in the Saint Vincent Hospital, Portland, Oreg., in 1883, for secondary syphilis (probably hereditary). The immediate cause of death was hemorrhage from the pulmonary artery, the patient having had for some days previous slight attacks of hemorrhage of the smaller arteries in the lung tissue.

Autopsy.—Pericardial sac adherent to lungs and pleura attached to chest-walls very firmly in many places as well as to the diaphragm. Scarcely a vestige of healthy tissue was to be found in either lung, and the general aspect presented on section was of cavities and infiltrated patches of pneumonic exudations, together with gray hepatization and tubercular deposition. The right upper lobe was engorged with blood, and the many cavities, varying from a pea to a walnut in size, were filled with coagula and purulent matter. The right middle lobe had also some small cavities and the same general appearance. The right lower lobe showed gray hepatization, tubercular infiltration, and hypostatic congestion. The left upper lobe was mostly a cavity filled with coagulated blood, and the eroded surface of the pulmonary artery showed where the fatal hemorrhage had taken place. The left lower lobe had smaller cavities throughout its substance filled with the product of broken-down blood and tissue. The liver was greatly enlarged, weighing 2.260 kilogrammes, and presented a general anæmic appearance. It was evidently a simple fatty degeneration of the liver, which is often found in phthisis pulmonalis. Other organs normal but anæmic.

The case was interesting to the reporter as another instance of the rapidity with which mixed races succumb to pulmonary disease. The half-breed and the mulatto do not seem to possess a moiety of the stamina of the full-blooded of either race, and it would be an interesting study in racial characteristics if some concerted investigation could be instituted looking to the comparative predisposition to tubercle in the half-breeds and mulattoes.

CASE 14.

F. F. N.; aged 25; born in Sweden; admitted to Marine Hospital, New York, October 21, 1885, with the ordinary symptoms and physical signs of phthisis pulmonalis; died January 29, 1886.

Autopsy.—*Rigor mortis* and emaciation marked. The left lung was firmly adherent to the chest-walls and the diaphragm through its whole surface. Three large cavities were found at the apex, the largest, one-fifteenth of a metre in diameter, occupying the apex proper; another, immediately adjoining, one-fortieth metre in diameter, and a third almost the size of the first. These cavities were nearer the posterior surface. The whole lung was filled with smaller cavities of varying

size, between which were interspersed groups of tubercle. The base of the lung was least affected by disease, and was partially emphysematous, or, more strictly speaking, contained patches of emphysema. The right lung was likewise adherent to diaphragm and to the upper and lower portions of the chest-wall, free at the center. The adhesions were not so strong as those upon the left side, which latter required great force in breaking up. A large cavity filled with pus occupied the apex of the right lung, and the remaining portion of the organ was filled with groups of tubercle and minute cavities. Emphysema on its anterior aspect. Gall-bladder distended. Liver normal. Pericardium contained about 32 centimetres yellow fluid, rather thick. No adhesions or lymph. Heart normal in size, slightly covered with fat on right surface. Spleen adherent to left lobe of liver, enlarged, moderately friable, and dark. Kidneys slightly enlarged, otherwise normal. No evidence of tubercle in alimentary tract or mesentery.

CASE 15.

Tubercular Laryngitis.

J. O.; aged 30; born in Finland; admitted to Marine Hospital, New York, December 3, 1885; died February 4, 1886.

History.—No history of phthisis in family. Always enjoyed good health until 25 years of age, excepting at the age of 18, when he was affected somewhat as at present, viz, with a bad cold and aphonia. When 25 years old (five years ago), he had chills and fever, which lasted, off and on, during the next two years. Had jaundice also during this period, and hæmoptysis. This hæmoptysis, however, was all within a period of three weeks, small in amount, and never returned. Was working up to date of admission. Last winter patient took a severe cold and cough, but spit no blood. The cough continued till time of death, and the loss of flesh was great. About three months before admission he became unable to speak aloud. Has had pain in throat and difficulty in deglutition. Two weeks after admission complained that he could not swallow. Liquid food gave him more trouble than solid, both going the wrong way.

Laryngoscopic examination revealed much thickening around the epiglottis. The epiglottis appeared folded on itself, and evidently formed an imperfect covering to the larynx in deglutition. The vocal cords could not be seen. There was some mucus but no ulceration at time of first examination; later, ulceration was visible. To ascertain that the difficulty in swallowing was not due to infringement on the œsophagus, a full-sized tube was passed without trouble into the stomach, but immediately after the patient could swallow better. Slight glandular enlargements were present in right side of neck behind the sterno-cleido-mastoid. No bruit could be heard with heart sounds. Has apparently cavernous respiration in right lung anteriorly and left lung posteriorly.

The above is a copy of the record of physical examination made before death. Patient died from asthenia.

Autopsy (twenty-fours hours after death).—Rigor mortis marked. Body emaciated. Lungs: Right compressed, pushed up somewhat by the liver. Pleuritic adhesions at upper portion were very firm, and could with difficulty be broken up. No adhesion to the diaphragm. There was a large cavity at the apex torn open in attempting to remove the lung, which was almost gangrenous at this portion. The remaining *portions of* the lung were thickly spotted with miliary tubercles. Left

lung not bound by pleuritic adhesions; its surface, however, conveyed a nodulated sensation to the hand and was covered with dark spots. At the apex the outer surface of the lung was gangrenous immediately above a cavity which contained pus. The whole lung was infiltrated with tubercular deposits, presenting the same appearance on section as the right. Heart: *Post-mortem* clot in right auricle; *ante-mortem* clot in left ventricle. Liver showed evidence of recent slight inflammation. Gall-bladder distended. Spleen: Capsule adherent and showing spots resembling cicatrices. Kidneys normal. On removing the larynx and trachea they were both found filled with muco-pus. The epiglottis was thickened, doubled on itself in its long diameter, and its tip was abbreviated by ulcerative process. The mucous membrane of larynx and trachea was pale, soft, covered with pus, with points of induration. The whole larynx was a sac of pus. The vocal cords were entirely gone. Deep ulceration was observed on the left anterior surface, between the cricoid and thyroid cartilages.

CASE 16.

Supernumerary Spleen.

A. L.; aged 40; nativity, Denmark; was transferred from Norfolk, Va., to the Marine Hospital, Wilmington, N. C., February 15, 1886.

History—Dyspnœa; cough usually moist, but at times dry; expectoration usually abundant, at times streaked with blood; great emaciation; loss of apetite and strength; pleuritic pain; night sweats with occasional chilly sensation in evening. Dullness on percussion; moist râles, and increased vocal resonance below upper left lobe and over right upper; over left upper lobe ample signs of cavities.

Autopsy.—Left upper lobe entirely gone, except larger blood-vessels and bronchi; lower lobe undergoing consolidation; right upper lobe contained numerous small cavities; mesentric glands enlarged; other organs normal. There was a supernumerary spleen about the size of a hickory nut, having its own artery and vein, branches of the main artery and vein. It was about 5 centimetres below the main spleen and attached to its lower border. Weight of organs: Right kidney, 157 grammes; left, 155 grammes; spleen, 230 grammes; supernumerary spleen, 4 grammes; liver, 1,355 grammes; right lung, 596 grammes; left, 542 grammes; heart, 325 grammes; pancreas, 112 grammes.

CASE 17.

G. E. R; aged 28 (colored); nativity, Delaware; was sent from Richmond, Va., to Marine Hospital, Wilmington, N. C., March 4, 1886.

History—Has had several attacks of rheumatism. Complains of pain in præcordial region, cough, dyspnœa, and vertigo. There is a diastolic murmur over aortic valves and a systolic murmur at apex; legs œdematous; ascitic fluid in belly. The disease progressed slowly to a fatal termination, which came June 13, 1886. Four litres of fluid were drawn from abdomen three days before death.

Autopsy.—Five hundred C. C. fluid in abdominal cavity, 300 in pericardium, and 500 in pleural cavity. Abdominal organs normal. Right lung seat of hypostatic pneumonia; left normal, but small from compression by dilated heart and fluid. Heart dilated; tricuspid orifice admits four fingers easily, mitral three; aortic valves inefficient. Weight of organs: Right kidney, 167 grammes; left, 200 grammes; right lung, 1,120 grammes; left, 415 grammes; spleen, 135 grammes; liver, 1,420 grammes; heart, 380 grammes.

CASE 18.

Old Dislocation of Hip.

J. P. (colored); aged 45; a native of Virginia; admitted to Marine Hospital, Wilmington, N. C., November 2, 1885.

He was transferred from Norfolk, Va., with the diagnosis of chronic pneumonic phthisis. On admission there was dulness over right lung, no râles and bronchial breathing; expectoration purulent; at times seemed like pure, fetid pus, and at times streaked with blood like the discharge from a freshly opened abscess. He failed rapidly, and died on the 29th of November, 1885.

Post mortem.—Right lung was one large abscess cavity, containing foul-smelling pus. He had a dislocated hip, dislocated upward upon dorsum ilii. It was dislocated when he was a child in charge of a nurse. It must have been dislocated at least forty years. The glutei muscles were very much atrophied. The gluteus maximus arose from the posterior fourth of the crest of the ilium, and was inserted below the great trochanter; the gluteus medius arose from the anterior fourth of the surface between the superior and middle curved lines and inserted into the great trochanter; the gluteus minimus was smaller than usual, but had its normal insertion and origin. The capsular ligament was lengthened and thickened, as was the ligamentum teres. The neck was shorter than normal. The trochanter minor was covered with cartilage and articulated with the acetabulum at its upper edge. This part of the acetabulum was about 2.5 centimetres long and 1.5 broad. The longer dimension of this articular surface was perpendicular to the axis of the femur. The rest of the acetabulum was covered with tissue like periosteum. The origin of the capsular ligament was normal. The caput femoris rested against the capsular ligament, which was much thicker than normal. The neck of the femur was shorter than normal. The neck from the inner edge of the great trochanter to the outer edge of the head of the femur measured 1.25 centimetres. The lengthening of the capsular ligament was not real. The cartilage of the upper edge or surface of the caput femoris was eroded. Within the capsular ligament was a synovial membrane. The shaft of the femur was 2 centimetres in diameter.

CASE 19.

Fibromata of Kidneys.

G. A. (negro); aged 50; nativity, Tennessee; admitted to Marine Hospital, Memphis, Tenn., September 30, 1884; died April 2, 1886.

The patient stated he was treated for pneumonia in the United States Marine Hospital, Saint Louis, Mo., in 1874, for two months. Was treated subsequently in the same hospital in 1878, 1882, and 1884 for hæmoptysis. He appeared quite feeble, although able to move about the wards and sit in the sun. Chest circumference: Expiratory, 82 centimetres; inspiratory, 83 centimetres. On percussion, resonance at anterior apex of right lung; inferiorly and posteriorly dullness. Dullness general over left lung. Exaggerated respiratory murmur over apex of right lung; mucous râles over base. Amphoric respiration over apex of left lung; coarse bronchial respiration over portion of inner border of lung. Specimens of the sputum were examined several times for the bacillus tuberculosis, Ehrlich's method of staining being employed, *but no* bacilli were found. This was attributed to insufficient magni-

fying power of the objective. The patient was ordered a mild expectorant mixture, and for occasional fever and expectoration of a few drops of blood was given a mixture containing carbolic acid and tincture of iodine. He slowly but constantly lost strength; the retarded progress of the disease was considered the result of better hygienic surroundings and dietary. He died April 2, 1886.

The necropsy was made twelve hours *post mortem*. *Rigor mortis* already commenced. The brain weighed 1,215 grammes, and was normal. The right lung was adherent to the costal and diaphragmatic pleura by old fibrinous adhesions, and was removed with great difficulty; it weighed 600 grammes. On section of the lung the bronchi were prominent from the surrounding fibroid thickening; several peribronchial hæmorrhagic infarcts were found. The pericardial sac was so closely adherent to the left costal pleura that it was necessary to remove it before the left lung could be reached. This lung was generally adherent to the costal and diaphragmatic pleura by old fibrinous adhesions; the lung was compressed and weighed only 307 grammes. On section only a few of the largest bronchi were patent, and these were greatly reduced in caliber by the general fibroid degeneration. A small abscess was found circumscribed about one of the bronchi in the apex of the lung. No tubercles were found. The heart weighed 1,160 grammes; normal. The liver weighed 1,160 grammes, the spleen 110 grammes; each was normal. The right kidney weighed 148 grammes, the left 127 grammes; each was small and cirrhosed; and in a pyramid in the right and in a papilla in the left kidney was a small yellow globular body about the size of a pea. The tubuli were separated, and apparently not affected by or connected with the neoplasms, which were enveloped in capsules derived from the intertubular stroma. On section the bodies were hard, of uniform consistency, and under the microscope appeared composed of fibrous tissue; bacilli were not found. The stomach, intestines, and bladder were normal.

CASE 20.

Carnification of Lung. Enteritis.

E. P. (negro); aged 25; nativity, Tennessee; admitted to Marine Hospital, Memphis, Tenn., April 14, 1886; died April 20.

This patient was treated in the Contract Hospital at Vicksburg, Miss., from January 11 to February 9, 1886, for acute dysentery. He stated on admission at this port that he had not been well since leaving the Vicksburg hospital, having suffered from pain in his lungs, bloody expectoration, and pyrexia. From the physical examination the diagnosis of chronic pneumonic phthisis was made. During treatment his temperature averaged 38° C.; his pulse varied from 78 to 126; his respiration from 30 to 72. He died on the afternoon of April 20.

Autopsy (twenty-four hours post mortem).—Rigor mortis. Body of an emaciated male negro. The blood-vessels of the pia mater were congested; the brain was otherwise normal; weight, 1,105 grammes. The right lung was adherent at the apex by old adhesions. All the lobes were attached together by a yellow fibrinous effusion. The lung on section was red, dense, with an obliteration of the bronchi, and was an admirable illustration of the rare "carnification" that occurs where a fibrinous pneumonia does not undergo resolution. The left lung was attached by old pleuritic adhesions to the costal pleura; the lobes were attached and the organ presented the same appearance as in the right

lung. The heart weighed 350 grammes, the ventricular cavities containing 25 grammes of yellow fibrin clot. The coronary blood-vessels about the origin of the pulmonary artery were congested, and the adjacent pericardium was inflamed. The liver was of a yellowish-brown color; normal; weight 1,983 grammes. The spleen weighed 216 grammes; normal. The right kidney weighed 169 grammes; the left, 187 grammes; both kidneys were irregularly pyramidal in shape. The intestinal peritoneum was congested; there were a few adhesions of the jejunum, and black discolorations at various points in the small intestine. The latter lesions were the result of the enteritis above referred to.

CASE 21.

E. D.; aged 30; nativity, New Brunswick; admitted to marine ward German Hospital, Philadelphia, Pa., December 12, 1885; died March 7, 1886.

History.—Patient, on admission, had cough of long standing. Family history good. There was dullness on percussion over both apices of lungs. The symptoms were those of chronic bronchitis, gradually changing to those of phthisis. Emaciation was progressive; hectic fever was present; there was, every afternoon, elevation of temperature, and sweating at night. The cough became gradually more obstinate; the sputa were numular, and he had ulceration of larynx. Failure was uninterrupted until his death (March 7). His treatment was addressed to symptoms, and toward the close confined chiefly to stimulants, with morphia and atropine to control cough, pain, and sweating.

Autopsy (*March* 8).—Body extremely emaciated. On opening the thorax the left pleural cavity was found to contain a large quantity of dirty serum, containing much granular and flocculent sediment. This measured 1,350 C. C. The lung was much retracted, and was a mass of suppurating cheesy foci. The right lung was also much diseased, showing the same pathological condition. There was no effusion in right pleura; adhesions were pretty firm. There was one large cavity in the apex of each lung filled with pus. There were no pathological lesions in any of the abdominal organs, except a considerable number of enlarged tuberculous glands at numerous points along the small intestine. None of these were ulcerated.

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EMPYEMA.

T. M.; aged 50; born in Germany; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., December 16, 1885, with lobular pneumonia; discharged February 2, 1886, and readmitted with tubercle of lung the following day; died February 28.

Empyema was made evident before death, and a small quantity of pus withdrawn by means of an aspirator. The pus was too thick, however, to be removed in this manner, and the patient was too weak to submit to a free opening.

Autopsy (*thirteen hours after death*).—*Rigor mortis* moderately marked. On opening the left pleural cavity it was found completely filled with sero-purulent fluid. The lung was pressed against the inner boundary of the cavity, its upper two-thirds being compressed to the thickness of not more than .004 metre (one-sixteenth of an inch). The base was somewhat thicker. The lung tissue at the base was thoroughly disorganized, filled with purulent infiltration, and very friable. Sections of

the left lung showed solidification, and would not float when placed in water. Right lung bound to chest-walls with fresh adhesions, congested throughout. Cut portions, however, would float in water. In both lungs were slight tubercular deposits. Heart fatty; pericardium contained an abnormal quantity of fluid.

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CHRONIC INFLAMMATION OF STOMACH.

D. M.; aged 47; born in New York; admitted to Marine Hospital, New York, September 22, 1885; died January 25, 1886.

History.—On admission the patient was pale, anæmic, suffering from dyspepsia, with symptoms of a subacute inflammation of the stomach. Under active treatment with arsenic, iron, and pepsin, the patient rapidly improved, and asked for his discharge October 12, 1885. He resumed work and was not under observation till December 22, 1885, when he was again admitted, suffering from extreme debility, chronic gastritis, and marked anæmia. An examination found all the organs to be in a normal condition, except a dilated stomach, and a marked anæmic condition of the blood, the microscope showing a great diminution in the ratio of red corpuscles. Despite the most careful treatment and thorough stimulation the patient gradually became worse, the anæmia progressing till his death occurred from asthenia, on January 25, 1886.

Autopsy.—*Rigor mortis* well marked; body emaciated. Œdema of penis (the only dropsy found). Lungs normal and no pleuritic adhesions. Heart normal in size, considerable fat distributed over the surface, valves normal, no clots, muscular structure soft, evidently undergoing fatty degeneration. Pericardium normal. Liver slightly fatty. Spleen normal and no enlargement of lymphatics. Suprarenal capsules normal. Kidneys surrounded by fat, capsule not adherent, pale, and, like the heart and liver, undergoing a fatty change. The stomach and intestines externally were unusually white, and the former greatly dilated, its transverse diameter being ½ metre and its vertical diameter ¼ metre. Upon opening the stomach its walls were found to be very thin, the mucous membrane exceedingly pale, soft, and covered with a thick muco-purulent discharge extending over the entire surface, but most noticeable at the pyloric extremity, the result of the long-standing inflammation which had extended down to the muscular layer. It might be well to add that this patient was not addicted to the use of alcoholic drinks.

NOTE.—The above case is clearly one of "progressive pernicious anæmia" following a chronic gastritis. First, the dyspepsia, then a subacute followed by a chronic inflammation of the mucous membrane of the stomach, originating spontaneously. Anæmia supervened, due to insufficient nourishment and defective assimilation, blood changes took place, and the fatty condition of the organs as revealed by the autopsy occurred.

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TYPHLITIS.

H. T.; white, aged 23; nativity, Norway; admitted to Marine Hospital, Cincinnati, Ohio, May 26, 1886; died June 6.

History.—On admission, patient stated that he had been having diarrhœa for the last two weeks—from two to six passages daily; and now

has some tenderness of the bowels, particularly over the umbilical region. Pulse, 88; temperature, 39¼°. Ordered ol. ricini and syr. rhei, and mustard poultice to bowels.

May 27.—Pain continues, but not severe; only one stool, pale and unformed. Rather more tenderness in right iliac fossa, no gurgling. Most comfortable position in bed is on right side with right thigh flexed on trunk; retains this continually.

June 6.—Pulse 140; much weaker; no pain; temperature 38⅘°; P. M., died.

Autopsy.—Rigor mortis well marked; body fairly well nourished. Only the abdominal cavity and contents examined. Visceral peritoneum, as well as parietal layer, of about one-quarter the entire extent, found to be highly congested and inflamed; cæcum bound firmly by organized lymph to the iliac fossa and abdominal wall; small quantity of fecal matter had escaped into the peritoneal cavity. The entire cæcum easily broken down, and found to contain pus, bloody serum, and fecal matter. No foreign body found to account for the inflammation.

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OBSTRUCTION OF BOWELS.

T. S.; aged 24; nativity, New Brunswick; admitted to marine ward, German Hospital, Philadelphia, Pa., January 2, 1886, with a history as given by himself that indicated some form of intestinal obstruction.

History.—He had been sick about three days, suffering with abdominal pain and constipation; and had taken, he said, several teaspoonfuls of laudanum from the ship's chest. When examined he was apparently suffering greatly. He complained also of retention of urine, and was catheterized. During this operation, which was not very difficult, and subsequently while waiting for the ambulance, he was in great distress, walking up and down, his countenance betraying great anxiety, and his whole surface bathed in perspiration. Examination at the hospital two hours later revealed distension of the abdomen, slightly more prominent at the ilio-cæcal region than elsewhere.

He was ordered pulv. opii, .03 gramme. every 4 hours, and ol. ricini and glycerine āā 4, every 2 hours. Temperature, 38.3° C.; pulse, 86. A thin flaxseed poultice was applied, covering the entire abdomen. An injection of warm water and soap was also directed to be given and to be retained as long as possible.

January 3, 9 *a. m.*—Condition not materially changed, except that there was tympanites more generally distributed, as was also the pain. He had vomited once, and the injection came away about an hour after its administration unaccompanied by feces. Temperature, 38° C.; pulse, 84; opium continued; purgative discontinued. Evening, slight change. Abdomen extremely tympanitic and facial expression anxious. He was given nearly 2,000 C. C. warm-water injection with the hips elevated, which was immediately voided without feces. During the following night he had two fluid evacuations aggregating 500 C. C., of a light yellow color and fecal odor.

January 4 *and* 5.—No material change in his general condition. Repeated injections to limit of capacity with no other result than above mentioned. After consultation it was decided that operative relief was indicated, and at 3.30 P. M. he was placed upon the operating table and the administration of ether was commenced. In a few minutes his respiration failed and the skin became cyanosed, and for a full half hour

efforts at resuscitation (including hypodermics of whisky and ammonia, and the use of the battery) were persevered in. He slowly rallied, and it was agreed that it would be unwise to proceed with the proposed operation. He was placed in bed, hot bottles placed under the blankets, and restoratives continuously administered. These included digitalis, belladonna, whisky, and ammonia.

January 6.—Mucous râles have developed throughout both lungs, and his abdomen remains excessively tympanitic. Dyspnœa was a prominent symptom; digitalis, belladonna, and opium were continued. His food from the first was chiefly concentrated beef extract and milk in small quantities. His thirst was excessive, and he was given ice in small quantities. This day he had nine stools, fluid in consistency and yellow in color, and frothy from admixture with air bubbles. He passed considerable quantities of flatus and belched frequently, but without any apparent effect on his tympanites. From this time until the fatal termination there was no very marked change except increasing prostration and difficult respiration.

January 7, nine stools; January 8, fifteen stools; January 9, four stools; January 10, eight stools; January 11, eight stools; January 12, five stools, and January 13, six stools. These evacuations possessed the same characteristics as those described, and averaged about 300 C. C. each. His highest temperature was 39.4° C., in the evening of January 7; lowest temperature, 37.2° C., on the morning of January 9. Highest pulse, 114, January 12; lowest, 74, January 8. He vomited fecal matter on the 7th, 11th, and 13th, having a fecal odor, though not very marked. On the 9th he was aspirated in the ileo-cæcal region, and on the 11th in the transverse colon. The same fluid was withdrawn without any apparent benefit or the reverse. The tympanites continued very marked, and the difficult respiration more aggravated and attended with moderate expectoration of viscid puriform sputa. He died at 11 P. M., January 13, 1886.

Autopsy (*January* 14, 4 *p. m., twenty-two hours after death*).—Body that of a large, well-developed, muscular man. *Rigor mortis* slight. Abdomen largely distended. Lungs deeply and almost evenly congested, and slightly crepitant. No pleural adhesion, and no effusion. Heart normal, containing unorganized clots. On attempting to lay back the great omentum it was found intensely congested, and tightly adherent to the subjacent intestines. The slightest effort to remove the bowels was followed by tearing of their walls, which were greatly distended. The coils were tightly glued together by adhesive inflammation, and the most pains-taking dissection failed to satisfactorily determine the point of original occlusion. The slightest traction was followed by a tear and a discharge in large quantity of the same thin yellow fluid that had passed per rectum during life. The small intestines were greatly distended to a point, as near as could be made out, near the junction of jejunum with ileum. From this point to ileo-cæcal junction the caliber was very much diminished, but still patulous. The ascending and transverse colons were likewise greatly distended, while the descending colon was reduced to a small tube, but still capable of allowing the passage of thin fluids. In no portion of the intestinal tract were any solid or semi-solid feces found. There was abundant evidence of general peritonitis, enteritis, and colitis. There were no important changes in the liver, spleen, and kidneys, nor was there any peri-typhlitis, as was thought probable in the early history of the case. The autopsy unfortunately did not throw the light on the case that was hoped for, owing to the ntestinal adhesi ons and their easy laceration. If he had lived twenty-

four hours longer perforation would doubtless have ensued. It is probable that he had obstruction at one or both of the above-mentioned constricted portions, which were at a later stage partially removed; but adhesive inflammation and peritonitis prevented sufficient restoration of the caliber of the gut to make recovery possible.

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STRICTURE OF SMALL INTESTINE.

J. A.; aged 28; nativity, North Carolina (colored); was transferred from Norfolk, Va., January 19, 1886, and admitted to Marine Hospital, Wilmington, N. C.

History.—He had had a rupture several years. He could always replace it till in July, 1885. He was then on a vessel off Cape Hatteras, bound for Philadelphia. The rupture came down, and he could not replace it. It gave him much pain. When he arrived in Philadelphia he went to a physician, who put it back and offered to perform an operation to keep it up. He consented to the operation. The patient said something was injected under the skin near where the rupture came down. The first operation failed. A second was tried. He, in two days after the operation, suffered great pain in his abdomen; was swollen, feverish, and had to lie with his legs drawn up. He recovered from this attack in about four weeks and shipped. While at sea the pain returned with great severity, so that the master of the vessel on which he sailed, being near Cape Charles, put into Norfolk and left him. He was left at Norfolk about the 1st of September, 1885.

Condition when admitted at Wilmington.—Patient extremely emaciated, with an anxious expression of face; pulse feeble and frequent. In bed he lies with his legs flexed on his abdomen. Abdomen universally tender to pressure; no cough, dullness, or râles in chest; liver apparently of normal size; extremities cold; patient too weak to walk about ward.

Post mortem (*twenty four hours after death, which occurred March* 2, 1886).—When abdomen was opened three coils of small intestine were lying one above the other. These were distended to twice the normal size of the colon. These coils were empty, and covered the whole front of the abdomen, pressing the transverse colon upward and the other coils of small intestine backward. About 30 centimetres from the ileo-cæcal valve was a stricture of the small intestine. The stricture was about 9 centimetres long. Above the stricture the intestine was widely distended. There was no mucous membrane in the strictured part. The submucous and muscular tissues were much thickened and replaced in part by fibrous tissue. The strictured intestinal wall was 5 centimetres thick. There were several ulcers below the strictured part. Other organs small but healthy.

Weight of organs.—Right lung, 420 grammes; left, 287 grammes; right kidney, 145 grammes; left, 160 grammes; left suprarenal capsule, 10 grammes; right, 7 grammes; liver, 1,180 grammes; heart, 270 grammes; spleen, 60 grammes.

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CIRRHOSIS OF LIVER.

J. H. (negro); aged 35; nativity, North Carolina; admitted to marine ward Saint Joseph's Hospital, Baltimore, Md., August 18, 1885.

Patient admitted intemperate habits; stated that his present illness *began several months ago.*

Physical examination showed much emaciation; ascites well developed; there was also œdema of the feet and ankles; complained of dull pain in the right hypochondriac region, and could not lie upon the left side. There was tenderness over the region of the liver; the size of that organ was apparently normal. Shortness of breath was increased to dyspnœa on lying down, due to the ascites. The bowels were constipated, and some old hemorrhoids noticed; the patient sank gradually, dying September 18, 1885.

Autopsy (twenty hours after death).—*Rigor mortis* well developed. General enlargement of extremities and abdomen; abdominal cavity filled with straw-colored serum. Upper portion of right lobe of liver and lobus quadratus adhered to the diaphragm; weight of liver 1,430 grammes; surface was unequal, nodulated; streaks of connective tissue marked its surface also; substance was hard and fibrous, somewhat granular in appearance; its color lighter than normal. Gall-bladder contained about 8 C. C. dark bile. Spleen much enlarged; darker than normal; tissue easily disintegrated. Intestines and peritoneum showed signs of old peritonitis. Other organs normal.

Case 2.

Hemorrhage from Abscess Wall.

J. S. (colored); aged 50; nativity, Virginia; admitted to Marine Hospital, Cincinnati, Ohio, April 12, 1886; died June 8.

History.—Admits having been a hard drinker, but denies any specific history. He complains of pain in right chest over the sixth rib, and occasionally in right hypochondrium; tenderness over epigastric region; none over the liver (right lobe) itself. Liver was much enlarged, particularly the left lobe. Heart considerably enlarged, and a constant dry cough complained of. Feet and legs are somewhat œdematous. Abdomen distended with fluid and flatus, causing considerable pain at times, and always more or less difficulty of breathing; pulse 84; appetite poor; bowels constipated; urine scanty and high-colored; abdominal veins enlarged. He has also a large troublesome scrotal hernia of many years' standing.

Treatment.—Symptomatic and supporting.

May 1.—Very severe pain in right hypochondrium.

May 2.—Abdominal pain and distension greater.

May 3.—Stools still very light in color.

May 4.—Very little rest night or day.

May 5–20.—Condition about the same. On the 20th paracentesis was performed, but owing to the character of the fluid withdrawn only a small quantity was allowed to escape; sufficient, however, to give marked relief. The fluid, when first drawn, appears almost like pure blood; when allowed to stand a few hours about one-third is seen to be red blood corpuscles, the remaining two-thirds a straw-colored fluid; 1,000 C. C. in all.

May 25–31.—Does not eat very much in consequence of abdominal distress following; becoming emaciated very rapidly; drowsy and stupid at times.

Treatment continued.

June 1.—Considerable distress from the distension; aspirated 600 C. C. of blood and serum, giving some relief.

June 2.—Pulse 90; bowels open; pain less.

June 8 (8.40 *p. m.*).—Died.

Autopsy.—Body is much emaciated; *rigor mortis* well marked. The appearance of the liver sustained the diagnosis, yet it was unusually large for a "hobnail." The right lobe extended slightly beyond the ribs, while the left across and occupying a large part of the left hypochondrium. The numberless granulations or projecting lobules were distinctly marked. Glisson's capsule very much thickened. The substance of the liver hard and dense, showing upon cutting the yellow spots which correspond to the external granulations. Gall-bladder contained one and a half fluid ounces of bile. The peritoneal cavity contained nearly two gallons of blood and ascitic fluid; at least one pint of recently coagulated blood-clots in the right lumbar region and some in the pelvic cavity. Upon the posterior part of the superior surface of the liver was found a superficial abscess, size of walnut, that had opened into the peritoneal cavity; this without doubt being the source of the blood. Heart, spleen, and kidneys enlarged.

CASE 3.

T. M.; aged 41; nativity, New York; admitted to Marine Hospital, New Orleans, La., April 5, 1885; died January 17, 1886.

History.—He had been treated for rheumatic effusion in both knee-joints at Marine Hospital, New York, in 1880. Has had bad health since. Patient was cachectic and much emaciated. Spleen much enlarged. Liver smaller than normal. No appetite. Stomach very irritable. Under treatment the spleen became greatly reduced in size, but patient failed to improve. In November he was readmitted with diagnosis of cirrhosis of liver. Patient gradually declined, and finally died from inanition.

Autopsy.—Body emaciated to a skeleton; corneal ulceration; œdema of feet. Abdominal cavity contained about 3,000 C. C. of ascitic fluid. Pleuritic effusion in left pleural cavity. Recent adhesions near apex of left lung; hypostatic pneumonia at base and posteriorly, where a chalky concretion was found as large as a marble. Right lung normal. Heart small and contracted. Spleen firmly bound to diaphragm and left lobe of liver by old adhesions; tissue firm; weight 1,200 grammes. Liver small and contracted. Surface showed several cicatrices; tissue dense and firm. Kidneys small and contracted; capsule firmly adherent; surface rough and uneven. Cortical substance was almost entirely absent; tissue tough and fibrous in character. Pancreas smaller than normal. Intestines normal.

CASE 4.

L. J.; 55 years of age; nativity, North Carolina; admitted to Marine Hospital, Wilmington, N. C., March 26, 1886; discharged by request March 27; readmitted March 30, and died April 2.

History.—Pain in right hypochondrium of a boring character; tenderness over stomach; skin yellow; emaciated; slight cough; stools of a light color and at times very offensive. On physical examination liver was much enlarged, extending to crest of ilium nearly in mamillary line; in median line it was about 5 centimetres above umbilicus; spleen much enlarged and freely movable.

Autopsy (twenty-four hours after death).—*Rigor mortis* well marked; body emaciated; skin yellow; lower border of liver as above stated. All abdominal organs passively congested, the veins leading to them being much dilated. Weight of organs: Liver, 3,554 grammes; spleen, 1,470 grammes; right kidney, 267 grammes; left, 191 grammes; pancreas, 96 grammes; right upper lobe in a condition of gray hepatiza-

tion. The only thing indicating the affection of lung was slight cough. The cough was so slight that his chest was not examined. Heart small, but valves efficient. Right lung, 1,935 grammes; left, 770 grammes; heart, 280 grammes.

CASE 5.

D. K.; aged 35 years; nativity, Maine; admitted to Marine Hospital, San Francisco, Cal., April 27, 1886; died May 22.

Autopsy (sixteen hours after death).—*Rigor mortis* tolerably marked. Body emaciated; skin pale; some slight jaundice about the face. Thorax: Right pleura adherent over almost the whole of upper lobe of right lung. At one or two points the visceral and diaphragmatic pleura were connected by bands of adhesion. The cavity was occupied by about 1,000 C. C. straw-colored serum. Right lung: The upper and middle lobes presented apparently a condition of pneumonic consolidation, running into purulent infiltration. There were no cavities, but numerous vesicular abscesses filled with pus, simulating miliary granulations. The lower lobe was decidedly emphysematous, the interlobular septa freely broken down. Left pleura adherent almost everywhere. Little or no fluid. The greater part of the upper lobe was congested and œdematous. There were two areas of consolidation in the outer part of this lobe, both presenting appearance of closely-packed vesicular abscesses, at first sight resembling granulations. Each area was sharply limited, somewhat pyriform, equal in size to a hen's egg; apex towards root of the lung. No miliary granulations were disseminated. The lower lobe was collapsed and somewhat œdematous as to the upper half. Lower half and margins emphysematous, like the corresponding part of the right lung. Heart: The pericardium distended, with 500 C. C. bloody fluid; on turning this out the visceral and parietal walls presented an extraordinary villous appearance, being both entirely covered with organized fibrinous vegetations of a mossy appearance. There were many broad bands of organized fibrin connecting the two layers of the pericardium, and these bands were covered with similar growths. The latter were richly supplied with blood-vessels, and being of soft consistence, as were also the fibrinous bands referred to, the bloody character of the pericardial fluid was no doubt due to rupture and extravasation from vessels supplying them. Heart not greatly altered in size. Several blood-clots, some *ante mortem*, were found in the various cavities and extending through their orifices. Abdomen: Liver one and one-half times normal size, presenting numerous local thickenings and depressions of the capsule, which resulted in giving the organ a knobby lobulated appearance; section showed an advanced state of fatty degeneration. Tissue friable and yellow Spleen three times normal size; on section, deep chocolate color, congested, friable, almost pulpy. Stomach considerably dilated; many engorged veins could be traced on its surface. Kidneys both apparently fatty and jaundiced in color; the right kidney nearly twice the size of the left, and friable. Bladder small and firmly contracted. There was a stricture admitting No. 2 French sound in pendant portion of urethra.

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ABSCESS OF LIVER.

J. W. A.; age 38; nativity, Louisiana; entered Marine Hospital at New Orleans, La., September 14, 1885; died October 2.

Patient states that two months ago he had a sudden sharp pain in the right side, which was relieved in two or three days by a blister.

No pain since that time, but weak and unable to work. Three days ago a swelling appeared at the seat of former pain. His weight has fallen from 125 to 98 pounds. Examination shows a swelling over the right lobe of the liver from the seventh to the eighth ribs, most prominent over the eighth, where there is a small fluctuating point just over the rib. Temperature in the morning normal; in the evening 39.° C.; patient not confined to his bed. On September 15,500 C. C. of pus, unhealthy and dirty, was withdrawn by the aspirator. Temperature now became normal. A diarrhœa set in on the 20th, and the evening fever rose to 40°; 250 C. C. of sero-sanguinous pus removed by aspiration. From that date there was little change, save a fall of evening fever below 39° C., to the 30th of September, when an incision was made into the abscess, and about 1,000 C. C. of thick pus, with much lumpy and stringy matter, was removed. Cavity washed with a bichloride solution and a drainage-tube inserted. Patient died October 2.

Autopsy (eighteen hours after death).—Rigor mortis. Body extremely emaciated. The abscess in right lobe of the liver was found to be about 12.5 centimetres in diameter and flattened so that the depth was about 5 centimetres. The chest-wall formed the external boundary of the abscess, the liver on removal revealing the abscess as a circular, saucer-like depression. The cavity was bounded by thickened and infiltrated tissue. The portion of the liver not involved composed about two-thirds of the organ, and was fatty. There were adhesions between those parts of the liver near the abscess and the surrounding structures. Except these slight adhesions of adjacent coils of intestine there were no signs of peritonitis. The lungs were normal. Lower lobe of right lung adherent to diaphragm. Other organs small, but otherwise normal.

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ACUTE NEPHRITIS.

H. H.; aged 26 years; nativity, Denmark; admitted to Marine Hospital, San Francisco, Cal., March 26, 1886; died May 31.

Autopsy (forty hours after death).—The body was that of a large, well-developed man, though much emaciated. *Rigor mortis* beginning to disappear. Decomposition had already set in. Considerable hypostatic congestion of dorsum of body. Legs somewhat œdematous. Superficial bed-sore over each trochanter major. Upon making the usual incision for opening the thorax and abdomen, the cut surfaces of the superficial muscles were found to be of a deep blue color. The deep muscles appeared normal. Abdomen: Organs in normal location; intestines somewhat distended with gaseous and fluid contents, and of a deep blue color, somewhat tinged with green in places. Surface of the liver of the same blue color as the intestines, only more pronounced. Stomach and omentum presented the same blue color as the organs already mentioned; otherwise appeared normal. Thorax: Lungs did not collapse when chest cavity was opened. They were of a reddish-blue color, mottled, with numerous patches of interlobular emphysema upon their surfaces, especially about the apices. A few recent adhesions about apices and posterior portions of both lungs. Small quantity of clear bloody fluid in both pleural cavities. Heart: About 50 C. C. of clear bloody fluid in pericardial sac; heart much congested and blood-vessels engorged; walls soft, flabby, and doughy. The cut surfaces were œdamatous, and of a dark blue-brown color. Right heart contained a *small quantity* of dark fluid blood and a large fibrinous clot, which be-

gan in the auricle and extended through the auriculo-ventricular orifice into the ventricle, and from thence a considerable distance into the pulmonary artery. This clot was attached to the free edges of the valves, chordæ tendineæ, columnæ carneæ, and walls of the ventricle. A nearly similar condition was found in the left heart. All the valves were thinned and much reddened, especially about the attachments of the clots mentioned. Lungs: Both were œdematous to a high degree; no cavities or circumscribed deposits were found. Liver somewhat enlarged, much congested, and of a deep purplish blue color throughout. Spleen: Small, soft, and of the same color externally as the liver; more dark, if anything. It did not present the usual bluish-red color upon section, but a deeper blue color, similar to that with which all the organs were more or less permeated. Kidneys: Both about three-fourths normal size; capsules somewhat adherent, having a rough dull surface when removed. The cortices were somewhat thickened at the expense of the pyramids, and were of a dull pale-yellowish color, somewhat tinged with blue in places. Certain of the pyramids were of a deep red color, others decidedly pale. A few of them were also of a decidedly blue color.

CASE 2.

J. M ; aged 45 years; nativity, Ireland; admitted to Marine Hospital, San Francisco, Cal., April 28, 1886; died June 11.

Autopsy (twelve hours after death).—Body fairly well nourished; *rigor mortis* marked. Legs only, œdematous. Muscular tissues well developed and normal in color. Thorax: Upon opening the thoracic cavity lungs did not collapse. Surface of lungs greenish red in color, mottled with gray. Numerous strong adhesions of left lower lobe; apex free; small quantity of opaque red fluid in left pleural cavity. A few slight adhesions of middle and lower lobes, right lung. Very small quantity of opaque red fluid in right pleural cavity. Both lungs somewhat adherent to diaphragm. A few patches of interlobular emphysema on surfaces of both lungs. Both lungs crepitated slightly upon pressure being made, which also caused pitting. To the feel they were somewhat hard and doughy. Upon making incisions both lungs were found to be partly solidified and œdematous to a high degree, somewhat more marked in the left than in the right lung. No further abnormal conditions. Heart: Pericardium contained about 50 C. C of clear straw-colored fluid. Heart enlarged (hypertrophied), especially the left ventricle, the walls of which were somewhat thickened. Veins of heart much engorged. Both auricles contained a small quantity of dark semi fluid blood, and also the beginning of a large fibrinous clot. Right ventricle filled with dark semi-fluid blood. It contained also the continuation of the clot already mentioned, which was attached to the free edges of the tricuspid valves and muscular papillæ, and extended a considerable distance into the right branch of the pulmonary artery. Valves apparently normal. Left ventricle contained a small quantity of dark-colored semi-fluid blood. Otherwise, with the exception of its somewhat thickened walls, the same conditions here existed as in the right side, the clot extending and terminating abruptly just beyond the left subclavian artery, branches being continued a short distance into the branches of the arch. The cut surfaces of the heart were paler and softer than normal. Abdomen: Liver slightly adherent anteriorly, decidedly so to diaphragm; somewhat increased in size, yellow in color, and quite soft. Spleen smaller and lighter in color than normal, and somewhat softened. Kidneys: Left kidney about one-third larger than normal and

quite soft and flabby. Capsule easily detached, leaving a dull, smooth surface. Cortex about double usual thickness, pale, and thickly strewn with bright-red points. Pyramids decidedly congested and of a dark red-brown color. Right kidney about normal in size. It presented the same general appearance as the left, only the cortex was not so much thickened.

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BRIGHT'S DISEASE.

Chronic Nephritis.

F. D.; aged 53 years; nativity, United States; admitted to Marine Hospital, Key West, Fla., December 10, 1885; died February 20, 1886.

Upon admission there was considerable œdema of the scrotum and lower extremities, hypertrophy of the heart, and dyspnœa, so that the patient could not remain in a recumbent position. Urine scanty; contained 75 per cent. of albumen, with a few granular and hyaline casts.

History.—Stated this to be the third time he had sought relief for the condition, which had continued for some weeks. Obtained medicine in Mobile, and remained exposed to rough weather. First treated for the disease two years previously, and again a year later, and was enabled to continue his occupation, but was warned that a recurrence would be unfavorable. Iron, stimulating diuretics, diaphoretics, hot air baths, &c., with Bashane's mixture, afforded relief for a time, but uræmic symptoms finally supervened, and the patient died, comatose, February 20, 1886.

Autopsy.—Capillary congestion marked; considerable deposit of fat in connective tissue; usual straw-colored fluid found in all the cavities, and tissues œdematous. Lungs slightly compressed. Heart: Weight 600 grammes, with marked compensatory hypertrophy of left ventricular walls, to overcome renal tension; a few small calcareous deposits were found near semilunar valves; otherwise healthy. Liver normal. Spleen somewhat smaller and firmer, but of usual weight and appearance. Kidneys enlarged and smooth, weighing 315 grammes.; capsules thin and non-adherent; cortex dull and anæmic, while the pyramids appeared congested, with considerable intertubular hyperplasia.

CASE 2.

H. D.; aged 28 years; nativity, Virginia; admitted to marine ward, Saint Mary's Hospital, Cairo, Ill., June 19, 1885, suffering from diarrhœa and general dropsy; died August 1.

Autopsy (fourteen hours after death).—*Rigor mortis* well marked; general surface of the body swollen and œdematous. Brain not examined. Chest: Pericardium free on serous surface, and the sac contained about 500 C. C. of fluid. Heart much enlarged; left ventricle dilated; mitral and tricuspid valves nothing abnormal; one segment of semilunar valves of aorta puckered, and valve incompetent; clot in right heart; left, empty. Left lung much contracted, pleuritic adhesions at apex, and pleural cavity on left side contained a considerable quantity of serum. Right lung œdematous, depressed cicatrix at apex, and slight effusion in right pleural cavity. Abdomen contained a large quantity of effusion. Great omentum much increased in size, and was the seat of an extensive tuberculous deposit. Large intestine showed signs of recent inflammatory change on mucous surface, and the small intestine seemed normal

throughout. Liver large, bronzed on surface, and fatty on section. Spleen large and hepatized. Pancreas large. Right kidney increased in size; capsule non-adherent; surface mottled-looking; on section cortical portion increased in extent, pale in appearance, and granular when torn; pyramidal portion well defined, and contrasted strongly with the paler cortical portion. Left kidney same general appearance as right.

CASE 3.

Heart Disease.

W. G.; aged 56; born in England; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., January 2, 1886; died February 23.

History.—On admission patient complained of palpitation of heart, swelling of the feet, loss of appetite, and general debility. An examination of the chest revealed a dilated condition of the heart, mitral regurgitation, and chronic pleurisy. The urine contained large quantities of albumen, which, however, entirely disappeared just before death. The patient also met with a slight accident the day before admission, rupturing one of the muscular branches of the anterior tibial artery, hemorrhages from which at times occurred. A general hemorrhagic diathesis developed later in the case, and hemorrhages from the mouth and nose, with extravasation of blood into the connective tissues, frequently took place. The patient died suddenly on the morning of February 23, while sitting upright in bed. Paralysis of heart.

Autopsy.—*Rigor mortis* absent; emaciation slight. On opening the thoracic and abdominal cavities large masses of fat were observed, completely covering the organs beneath. Pericardium entirely incased in fat. Heart: Large masses of fat all over the surface, but no evidences of a fatty degeneration of the muscular tissue; diastole; filled with blood; no clots. Mitral valve insufficient and covered with a calcareous deposit. Aorta fatty. Lungs normal in structure, but very firmly adherent to the chest-walls and diaphragm. Liver bound down by peritoneal adhesions; also evidences of old peritonitis. The stomach and large intestine were firmly adherent to the spleen. Spleen enlarged and covered with large spots of pigmentary deposit. Kidneys: Each kidney was embedded in a mass of fat; capsule adherent, and upon its removal in places were seen small cysts the size of a pea, filled with a fluid resembling serum. The kidneys were of a pale-yellow color, approaching waxy degeneration, and around the medullary cones were small deposits of fat.

CASE 4.

Endocarditis.

D. M.; aged 35; nativity, New York; admitted to Marine Hospital, Chicago, Ill., October 18, 1885; died October 28.

On admission found to have typical symptoms of chronic Bright's disease, with cardiac complications. Several adventitious murmurs heard, the most prominent being those of aortic obstruction and mitral insufficiency. Had ascites and general anasarca. Death was caused by uræmia.

Autopsy.—*Rigor mortis* present; body much swelled. Heart largely dilated; mitral valve very much distorted; stenosis of aorta from inflammatory thickening, and large warty growths on margins of semilu-

nar valves; cavities of heart filled with white fibrinous clots; hydropericardium, the sac containing 1,000 C. C. fluid. Lungs, œdematous. Stomach normal. Liver enlarged; weight 2,000 grammes. Pancreas very white, contracted, and nodular. Kidneys pale and enlarged; weight 360 grammes; capsule thin; substance soft and friable.

Case 5.

J. R.; aged 30 years; nativity, Cape de Verde Islands; admitted to the Marine Hospital, Vineyard Haven, Mass., June 8, 1886; died June 11.

History.—R. has been an invalid for over two years, suffering from "dropsy" or general anasarca, for which he has been treated in various hospitals. The patient presents the history and appearance of chronic malarial poisoning. Body rather poorly nourished, extremely œdematous; skin harsh and dry; tongue heavily coated with gray color; bowels costive; urine scanty; has not voided any for twelve hours; has considerable dysuria; slight hypogastric tumor and flatness on percussion, indicating some retention. Catheterized him and evacuated 250 C. C. of high-colored urine of specific gravity of 1032; manifest trace of albumen. Pulse 100, small and rapid; respiration 27, rather shallow; considerable dyspnœa, especially on slight physical exertion; dullness on percussion, amounting to flatness, over thorax generally, especially on left side; temperature 36° C. in morning, 38° C. in evening; heart sound exaggerated, with murmur indicative of valvular insufficiency; insomnia, requiring use of anodynes to secure rest. Condition of patient from day to day varied but little from that indicated, except a manifest decline in vital energy until death, which resulted apparently from heart failure.

Autopsy (*fourteen hours after death*).—General œdematous condition of body and infiltration of cellular tissue; *rigor mortis* slight. Thorax: Extensive effusion of straw-colored serum into both cavities of pleura, especially the left; some old pleuritic adhesions. Lungs engorged; air-cells considerably distended with mucuss blood, and serum on incision. Heart: Extensive hypertrophy, with degeneration and mitral insufficiency; weighed 720 grammes. Liver large, of dark color: Gall-bladder distended; weighed 1,820 grammes. Kidneys enlarged, white, fatty degeneration; right weighed 230 grammes; left weighed 241 grammes; capsules not adherent. Blood exhibited the dark characteristic anæmic fluidity of malarial toxæmia.

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GRANULAR KIDNEY.

G. N.; aged 54 years; born in Georgia; entered the Marine Hospital at New Orleans, La., March 24, 1885; died July 7.

Disease had the usual history. Treatment was altogether palliative, reliance being placed mainly on a diet of sweet milk.

Autopsy (*ten hours after death*).—*Rigor mortis* slight; upper extremities emaciated; lower œdematous; abdomen greatly distended by ascites; petechiæ scattered over the body, mostly posteriorly. Lungs: Hypostatic congestion posteriorly, otherwise healthy. Heart considerably hypertrophied; walls of the left ventricle 3 centimetres thick; mitral valve thickened and insufficient; others normal, except that one of the leaflets of the aortic valves contained chalky deposits and several cal-

careous plates; portal circulation engorged. Spleen large, lobulated, and firm. Liver of normal size, granular on section, and more resistent than normal. Gall-bladder filled with bile, concentrated and of tarry color. Pancreas soft and friable. Kidneys undersized and pale; capsules peel easily, revealing a distinctly granulated surface; cortical portion nearly gone; tissue tough; on right kidney surface two small cysts; suprarenal capsules twice the usual size. Intestines and other organs not examined.

CASE 2.

Cirrhosis of Liver.

R. P.; aged 40 years; nativity, Massachusetts; admitted to the Marine Hospital, Boston, Mass., August 6, 1885; died August 14.

History.—The patient was first admitted to this hospital May 25, 1885, and discharged, improved, July 27.

The following statement was made by the patient on the date of his first admission to hospital: Health very good until December 2, 1884, when he received an injury from a fall from the poop to the main deck of his vessel, striking upon his back. He suffered intense pain in the small of back, and was confined to the bed about one week. Urine bloody, and passed with difficulty. About twelve days after accident feet and legs commenced to swell, and in a short time the abdomen was greatly swollen. Went to work again in about three weeks, but suffered from great difficulty in breathing, which has continued to the present time. The swelling of abdomen nearly disappeared a few months after injury, but feet and legs have been more or less swollen ever since. Has drunk whisky moderately for about ten years.

Physical examination at the date of his first admission to hospital revealed the following condition: First heart sound muffled, and slight murmur accompanying it; heard loudest 1 inch below and 1 outside of nipple. Abdomen prominent and flat on percussion above a deep girdle depression in its walls located about 1 inch above the umbilicus; below this line abdomen tympanitic. Urine loaded with albumen. Lower extremities œdematous. Patient suffering from great dyspnœa, an aspirator needle was introduced 3 inches below the ribs, a little to the right of the median line, and 2,000 C. C. clear albuminous fluid withdrawn.

At the date of the admission of the patient to the hospital the second time, his condition was about the same as when he first entered, with the addition of intense cephalalgia, diplopia, and gastric derangement. Convulsions and coma preceded death.

Autopsy.—Rigor mortis. Lower extremities and eyelids œdematous. Numerous firm adhesions between coils of large and small intestines and parietal peritoneum. One thousand C. C. ascitic fluid in peritoneum. Upper surface and right and left lobes of liver nodular, and adhesions between right lobe and parietal peritoneum; capsule opaque and the cut surface of left lobe hard and granular; weight of liver 1,700 grammes. Right kidney small; capsule firmly adherent, but surface smooth. On section of the kidney the cortical substance was found thin and granular. The color was deeper red than usual, particularly the medullary substance. Left kidney larger than right and capsule easily removed. Cortical substance greatly congested, and bleeds freely on section. Weight of right kidney, 90 grammes; of left, 100 grammes. Pericardium contained 25 C. C. clear fluid. Heart hypertrophied, but valves nor-

mal; weight of heart 890 grammes. Right pleura contained about 100 C. C. clear fluid. Brain not examined.

NOTE.—The injury received by the accident to the patient is not thought to be the origin of his disease; only a coincidence; but possibly producing a contusion of the kidneys, finally resulting in acute nephritis and hematuria.

CASE 3.

C. P.; aged 54 years; nativity, Maryland; admitted to the marine ward City Hospital, Evansville, Ind., November 7, 1885; died January 30, 1886.

History.—Patient had been a steamboat cook for many years; hard drinker. He had applied for office treatment for ulcer of leg in June and August of same year, and always appeared very palid and with bloated face. He now complained of great dyspnœa, which had been increasing for a few weeks; micturition very frequent; no chill at outset of dyspnœa; skin, waxy; chest, barrel-shaped; fluid found in left pleural cavity; hypodermic syringeful of clear serum drawn; in erect position, fluid at level of fifth costal cartilage; heart enlarged; apex beat lower and nearer median line than normal; slight œdema left foot; ulcer of long standing on left leg.

November 11.—General condition, improved; line of fluid, lowered; aspiration, deferred; urine, normal in quantity; pale green; specific gravity, 1014; albumen, abundant; sediment, small in quantity, composed of epithelium of every variety of shape; no casts.

November 21.—Patient drowsy.

November 23.—Comatose; mild delirium; bowels constipated; urine suppressed.

This condition continued until November 28, and during that time no amount of cathartics or diuretics was of the slightest effect. Excessive doses of elaterin (Merck's), elaterium (Powers & Weightman), and extract colocynth co. were administered. Pilocarpin, subcutaneously, alone produced any effect.

November 30.—During past two days consciousness has slowly returned. To-day he is about the ward.

December 1.—Amount of twenty-four hours' urine, 960 C. C. Characteristics same as mentioned previously, with addition of occasional epithelial cast. Fluid in left pleural sac much less after use of pilocarpin.

December 18.—Urine: Albumen less in amount; sediment, smaller quantity, consisting of free epithelium and a few epithelial casts.

January 4, 1886.—Amount of twenty-four hours' urine, 2400 C. C. During past month condition without much change. Mind clear, but he is inclined to sleep day and night. Fluid in left chest increasing slowly. Appetite, capricious. Walks about hospital.

January 6.—Urine: Albumen small in amount; acid; specific gravity, 1010; little sediment; few hyaline casts. Fluid in pleural sac interfering with respiration. By aspiration, 750 C. C. bloody serum removed; respiration thereby improved for a few days.

January 22.—Amount of tweny-four hours' urine 1020 C. C. Patient emaciating. Persistent hacking cough recently. Fluid in left chest again increasing and a small amount now discovered in right pleural sac. Slight œdema of legs.

January 29.—Respiration embarrassed; strength failing; mind partially obscured. Left pleural cavity again aspirated; 420 C. C. clear fluid removed; stupor increases through the day.

Autopsy.—Body greatly emaciated; small ulcer on left leg; 560 C. C. slightly turbid fluid in left pleural cavity, and 250 C. C. in right. Fifty C. C. serum in pericardial sac. Pericardium presents slightly shaggy appearance; lungs congested; heart weighed 588 grammes; muscular tissue of heart firm; kidneys contracted; each weighed 112 grammes, and both had superficially many cysts, containing clear or brownish fluid; colesterin crystals found in one. Liver, gall-bladder, and spleen normal in appearance.

CASE 4.

R. M.; aged 25 years; nativity, Sweden; admitted to Marine Hospital, Port Townsend, Wash., November 10, 1885; died December 12.

Autopsy (post-mortem examination held sixteen hours after death).—*Rigor mortis* present. Body anasarcous. Face and neck much bloated and discolored with deep purplish blue. Patient had been singularly free from cerebral symptoms, and *post-mortem* examination showed no gross abnormality beyond a large amount, about 50 C. C. of fluid, albuminous in nature and alkaline in reaction, at the base of the brain. Lungs: Highly œdematous and posterior portion hypostatically congested. Heart in diastole; pericardial fluid increased in amount. Valves normal. Liver: Slightly cirrhotic; weight, 3,125 grammes. Kidneys: weight, right 105 grammes and left 65.7 grammes. Right capsule very adherent, detached only in patches. Longitudinal section showed lines of trabeculæ very marked and white. Kidney generally light colored, and both cortical and pyramidal portion decreased in size; cortical portion became prominent and bumpy when cut, probably from release of restriction. Left kidney was much decreased in size, weighing 65 grammes, and the appearance of right kidney more marked. Microscope examination showed the tubuli filled with granular epithelial casts and granular matter. In the left it was particularly evident that the tubuli were deficient in epithelial covering. The afferent and efferent vessels were diminished in size, and in a large extent of the sections examined it was almost impossible to discern any distinct configuration of the copora Malpighiana. The abdominal cavity was filled with fluid.

CASE 5.

T. L.; aged 32; nativity, Massachusetts; admitted to Marine Hospital, Port Townsend, Wash., September 23, 1885; died February 6, 1886.

History.—While on the way from Australia to San Francisco, Cal., in August last, patient gives a history of having had an attack of swelling of the extremities, accompanied by shortness of breath and general weakness. Entered the hospital in San Francisco, leaving there in September. Upon admittance to this hospital patient complained of shortness of breath, cough, and general anasarca. Examination of urine showed 20 per cent. albumen and the urine in small quantity. Was tapped on two occasions, the first tapping withdrawing a large amount of serous fluid. Died February 6, 1886.

Autopsy (twelve hours after death).—*Rigor mortis* not marked. Abdomen moderately distended with fluid. Examination of chest showed nothing noteworthy. Kidneys, both right and left, much cirrhosed, being not over one-half the natural size and anæmic. Capsules strongly adherent, and cortical portion scarcely to be distinguished, from the atrophy caused by pressure.

CASE 6.

N. S.; aged 36 years; nativity, Missouri; admitted to Saint Mary's Hospital, Cairo, Ill., November 6, 1885, suffering from chronic Bright's disease. Died January 21, 1886.

Autopsy (eighteen hours after death).—*Rigor mortis* present; body emaciated; cuticle shrunken; brain not examined. Chest: Pericardium free from deposits or adhesions on serous surface; small quantity of fluid in sac; ecchymotic patches on free surface; ascending portion of aorta dilated, and atheromatous patches in portions of wall; heart, large; auricles dilated, ventricles hypertrophied, and walls undergoing fatty change. A large clot of fibrin, whipped free from red corpuscles, occupied both chambers of the heart and extended into aorta; mitral valve incompetent; calcareous deposits at base of leaflets and in sections of aortic semilunar valves; tricuspid and pulmonary valves healthy; right lung firmly adherent to pleural surfaces at sides and base, adhesions consisting of bands crossing the cavity. Right pleural sac contains about 250 C. C. of serum; the lung is diminished in size, and hepatized in lower lobe. No effusion in left pleural cavity; numerous adhesions; lung larger than right and slightly congested; both lungs deeply stained with pigment. Abdomen: Liver of medium size; yellowish tinge on surface, and the knife slips through it easily; section is greasy; lobus quadratus seems normal in consistence, and exempt from general fatty change. Pancreas small and shriveled looking. Spleen very small and firm on section. Stomach very much dilated; contains about 500 C. C. of grumous-looking fluid, and the surface of the mucous membrane is marked by ecchymotic patches Left kidney small, firm; capsule adherent in patches; section cuts firmly, pale and lustrous looking; cortical and pyramidal portions of the organ much diminished in extent, and the secreting structure has suffered. Right kidney same general appearances as left, though the change does not seem so extensive. A cavity the size of a filbert was found in the cortical portion of the left kidney; it was smoothly lined and contained a few particles of grayish sand. The omentum was much wasted and contained but little fat. Intestines apparently normal. The bladder contained some cloudy urine and was the seat of old cystitis. Weight of viscera: Heart, 640 grammes; lungs, 1,600 grammes; liver, 2,240 grammes; spleen, 64 grammes; left kidney, 80 grammes; right kidney, 64 grammes.

CASE 7.

E. H.; aged 41; born in New York; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., June 8, 1886; died June 15.

At the time of his admission the patient was suffering from rheumatic fever, the wrist, elbow, and shoulder joints of the right side being involved. This rapidly improved under the free use of salicylic acid, and the local trouble disappeared on the third day after admission. On June 13 the patient appeared to be drowsy; symptoms of uræmic poisoning set in; suppression of urine occurred, followed by uræmic coma and death. An examination of the urine showed a very slight trace of albumen; specific gravity 1003. Under the microscope hyaline and large granular casts were found with some epithelium.

Autopsy (twenty-four hours after death).—*Rigor mortis* well marked. No emaciation; lungs normal; heart slightly hypertrophied, and some fat upon its surface; valves, normal. The under surface of the liver was

slightly discolored. Intestines and spleen normal. Kidneys: Both kidneys presented the same general appearance, viz, very small, dense, and contracted; capsule adherent; several urinary cysts were found, and the cortical substance was much diminished. A case, therefore, of the small contracted kidney.

CASE 8.

Cardiac Hypertrophy.

J. M.; age 62; born in Ireland; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., May 18, and died June 20, 1886.

At the time of his admission the patient was very low, suffering from chronic Bright's disease, with complications of acute pleurisy, both sides, and cardiac hypertrophy. He was at once placed upon decided doses of the infusion of digitalis and Basham's mixture, and for a time did well, but uræmic poisoning set in, to which the case rapidly succumbed. An examination of the urine soon after admission showed albumen in small amount, specific gravity of 1005, with a considerable quantity of urea. Under the microscope globules of oil were seen, with altered epithelium and hyaline and large granular casts. An ophthalmoscopical examination showed the disk to be hyperæmic, with an irregular and indistinct outline, hazy in the vicinity of the optic papilla, with white stellated spots in the region of the macula lutea. Slight hemorrhagic extravasations were also seen. Dropsy in this case was moderate in amount, at times being absent.

Autopsy (thirty-six hours after death).—Rigor mortis slight. Emaciation great. The cartilages of the ribs had become ossified and had to be divided with a saw. On removing the sternum extensive and firm adhesions were found. The pericardium, nearly one-half an inch in thickness, was firmly attached to the heart and pleuræ, and could only be removed by dissection. The heart was greatly hypertrophied and undergoing fatty degeneration. The cavities were well filled with organized *ante-mortem* clots. The coronary arteries were slightly calcified, and the process of cretefaction had also extended into the coats of the aorta. The valves were normal. Considerable effusion was noticed in both pleural cavities as the adhesions existing were broken up. Both lungs were very œdematous, hypostatically congested, with spots of emphysema at the apex and cysts of serum scattered over the posterior surfaces. The cartilaginous rings of the trachea had become ossified. In the left lung a small tuberculous deposit was found at the apex posteriorly. The peritoneal cavity was filled with effusion. The intestines gave no evidences of recent inflammation. The liver was fatty and dark colored. Spleen normal. Kidneys: The kidneys were very much alike, small, hard, and contracted; granular in appearance; capsule adherent, and surfaces covered with cysts. On the left kidney twelve cysts were counted, and on the right seven. They varied in size from a bird shot (No. 10) to that of a walnut. On opening these cysts the fluid escaped, leaving a deep depression in the cortical portion of the kidney, which was greatly diminished in thickness. Two very large cysts were found at the superior extremity of the right kidney. Both kidneys were less than half their normal size. The stomach was dilated and the mucous membrane inflamed.

STRICTURE OF URETHRA, ORGANIC.

Abscess of Kidney.

H. P.; aged, 33; nativity, Denmark; admitted to marine ward, German Hospital, Philadelphia, Pa., January 26, 1886; died January 31.

History.—Admitted with complete retention of urine. He gave the following history: He had had symptons of stricture for about two years, which had gradually become more serious. On the Friday previous had complete retention, which was relieved by a city physician, by catheterization, after long continued efforts with different instruments. This was followed by considerable soreness and irritability, and increasing difficulty in urination, until finally complete occlusion again occurred on the evening of Monday, January 25. On the morning of the 26th, unsucessful attempts at catheterization were again made by a skilled surgeon, and he was then sent to hospital. At time of examination, 11 A. M., he had not passed urine for seventeen hours. His facial expression was anxious. He complained of great distress and urgent desire to urinate, and also a great deal of pain in the epigastric region. He was given morphine sulph. .025 gramme, and quinia sulph. .6 gramme, per mouth, and catheterization was attempted. A variety of soft and hard instruments were unsuccessfully tried, and then Holt's divulsor was essayed, which slipped into the bladder without great difficulty, and was immediately expanded with No. 7 dilator, and on withdrawal was followed by free discharge of about 1,000 C. C. of urine. All the instruments used had been previously coated with a 4 per cent. solution of cocaine hydrochlorate. The man expressed himself as immediately relieved, although still complaining of epigastric pain. He was given quinine sulph. .6 gramme, and a hypodermic of morphine sulph. .0125. He was ordered to remain in bed, and directions were given to the house surgeon to keep him under close observation, as a somewhat similar case had recently terminated fatally. The next morning his condition was as follows: Slight sweating; slight diarrhœa; pulse full; urine ammoniacal; very restless and excitable; pains in epigastrium, and later in the joints generally; some delirium. General condition unchanged, pulse full and strong until evening of 30th, when heart began to fail and extremities became cold. January 27, 28, 29, and 30, he urinated without difficulty. He had no symptoms of either retention or suppression. January 31: Early this morning his condition was critical, and the house surgeon had administered ammonia and whisky hypodermically. At 10.15 A. M. he was seen again. His condition was evidently grave. The radial pulse could not be felt, and the extremities were cyanosed and cold. Facial expression anxious; very excitable and mild delirium. Conjunctivæ were slightly icteric in color. Heart action feeble and rapid; respirations shallow and 40 per minute. Articulation jerky and indistinct. He was given whisky, ammonia, digitalis, and belladonna. While visiting another ward, a few minutes later, a message was received that he was dying. He was found sitting on the commode apparently moribund. He had insisted on getting up, and the nurse yielded. He was hastily placed in bed, pillows removed, whisky and ammonia given hypodermically, the galvanic battery applied to his cardiac region, and he partially reacted; the heart regained its suspended action, and he was brought from death to life. This improvement lasted about fifteen minutes, when his heart again failed and he gradually sank and expired without a struggle. He had no *retention or suppression* of urine.

Autopsy (*twenty-four hours after death*).—Body well nourished. *Rigor mortis* slight; sclerotics and face rather icteric in color. All other parts of the surface were cyanosed, ecchymosed, and with general hypostatic congestion. Thorax: Pleuræ and pericardial fluids normal. Heart tissue rather soft and dark in color. Left ventricle entirely empty; the other cardiac cavities contained uncoagulated blood. In one leaflet of the aortic valve there was a small fenestrum. With this exception the valves were normal; as were also the pulmonary artery and veins. Both lungs were congested in lower lobe. The upper lobes were crepitant, no pus cavities. Abdomen: Peritoneum healthy. Liver showed throughout evidence of incipient acute yellow atrophy. It was friable, and had a greasy feel and appearance. No pus cavity. Left kidney showed interstitial nephritis and atrophic change, and contained an abscess communicating with inferior portion of its pelvis. Right kidney same appearance in its texture with pyelitis. Spleen much enlarged and completely disorganized, being little more than a sac of pulpy material. Stomach presented evidence of gastritis. Intestines slightly congested. Bladder contained about 60 C. C. urine, and its mucous membrane was congested in localized spots. The mucous membrane of the urethra was much inflamed, and all the tissues composing the penis were congested, but there was no pus and no evidence of urinary infiltration, nor had there been symptoms of such a condition during life. The anterior wall of the urethra was ruptured in the membranous portion, showing a linear rent about ten lines in length. Cause of death, septicæmia.

CASE 2.

B. J. E.; aged 29; nativity, Norway; admitted to marine ward, German Hospital, Philadelphia, Pa., January 18, 1886, with organic stricture of urethra. On the following day he was submitted to careful examination with a view to locating the stricture, and the performance of such operation as was indicated. He was a man of apparently perfect physique, and about 6 feet high. The penis was large, and a tight stricture was diagnosed at the membranous portion by means of bulbous bougies. These were rapidly introduced up to No. 8, American (4 F.), without producing much pain or evidence of irritability. No. 9 would not pass. The man seemed in prime condition for a radical operation, and after a few minutes' delay Holt's instrument was introduced without much difficulty and No. 11 dilator thrust quickly in. The patient complained but little, and after a few minutes the instrument was withdrawn. Hemorrhage was trifling. He was ordered quinia sulphate .6 gramme, morph. sulph. .015 gramme, and flaxseed tea *ad libitum*, and ordered to remain in bed.

He was entirely comfortable during the day, and expressed pleasure at the ease with which he passed urine, something he had not done for a year. At 11 P. M. he was suddenly seized with a chill, which continued during the night, his temperature ranging from 37.2° C. to 38.3° C.

January 20, 11 *a. m.*—His condition was as follows: Expression of countenance anxious, though not extremely so. Skin purplish and perspiring freely; respiration hurried and shallow. Pulse feeble, 110; temperature, 38.5° C.; pupils normal; tongue pale, and intelligence clear. No pain anywhere, and no suppression or retention of urine. Heart-sounds feeble and muffled, and left lung somewhat congested. No vomiting or diarrhœa. Extremities cold. Prescribed tinct. digitalis .36 gramme, ammonia carb. .33 gramme, ammonia muriat. .66 gramme,

every two hours. Turpentine stupes to chest; jugs of hot water to feet and legs; milk punch freely.

6 P. M. visited again; condition not materially changed; treatment continued. He was passing urine freely and suffering no pain anywhere, and it seemed difficult to account for his condition, which was evidently very grave. The circulation seemed most at fault, the skin being cyanosed. Percussion and auscultation failed to indicate very extensive lung congestion.

At 8 P. M. next day, January 21, he died, the cyanosis and other evidence of obstructed circulation becoming more marked until he died.

Autopsy (*at 6 p. m., January* 21).—Body well nourished, a man in vigorous health. *Rigor mortis* slight; skin of a mottled color over entire body; pupils widely dilated, which was observed by the house physician before death. Lungs moderately congested but crepitant. Heart normal in size and texture; pericardial fluid normal. Right cavities and venæ cavæ filled with fluid blood; left cavities and large arteries entirely empty. Liver, kidneys, and spleen presented no signs of disease. Bladder contracted and empty, with some traces of a mild cystitis. Intestines normal. Careful dissection of the urethra showed a stricture ruptured on the anterior wall, about .02 metre in length and about two lines greatest width in the membranous portion. The rent showed little evidence of inflammatory action and none of urinary infiltration. Prostate gland entirely normal. The cause of death is obscure; it seems to have been a congestive chill (preceding "pernicious" fever) or else shock which paralyzed the heart's action. There was no pathological evidence of either septicæmia or pyæmia; whether the slight pulmonary congestion was cause or effect in the chain of pathological changes which terminated in death is undetermined.

Case 3.

Pyelitis and Cystitis.

J. C.; aged 33; a native of Scotland; was admitted to Marine Hospital, Detroit, Mich., October 15, 1885, with hard chancre and phimosis.

November 5 secondary symptoms were noticed. November 10 patient complained of difficulty in passing his urine, which trouble had existed for over one year. An examination revealed organic stricture of the urethra, two and one-half inches from the meatus, with extreme sensibility of the mucous membrane. November 22 the patient was anæsthetized and six strictures recognized. Divulsion was performed to full size of Thompson's divulsor, after great difficulty in reaching the bladder. At 7 o'clock P. M. a rigor occurred, unaccompanied or followed by fever. There was no rise of temperature until the 26th, when 38° C. was registered, and it afterwards ranged from 39° C. A. M. to 40° C. P. M. until death, which occurred December 2, 1885.

Autopsy (*December* 3, *twelve hours after death*).—*Rigor mortis* marked; extensive suggillations posteriorly; body well nourished; considerable pleuritis on both sides, lower halves, with pus in both cavities; lungs congested, posteriorly apparently hypostatic; heart normal, with yellow fibrinous clots in both ventricles; kidneys congested, considerably softened, with pus in pelvis; membranous and prostatic urethra dilated, and the seat of extensive ulcerations and suppuration; bladder much contracted, capacity not over 100 C. C.; the walls were very much thickened, varying from 1 centimetre at the fundus to two centimetres at the base and neck; the walls were the seat, particularly at the base and

neck, of extensive deposits of probably tuberculous matter of a dark gray and almost black color and containing numerous small cavities, which resembled lymphoid follicles. Their precise nature is undetermined, as there are no lymphatic glands in the bladder. The inner surface of the organ was largely composed of dense rugæ. Spleen enlarged; no peritonitis present. Other organs normal.

CASE 4.

Chronic Cystitis. Pyæmia.

J. W.; aged, 52 years; nativity, England; admitted to Marine Hospital, San Francisco, Cal., January 27, 1886, for organic stricture of the urethra and chronic cystitis; died March 2. His condition upon admission was very unfavorable. Originally of a weak and delicate organization, the long-continued drain upon his constitution had made of him a physical wreck. He was much emaciated and decidedly anæmic, and did not build up under tonic treatment and nutritious diet.

History.—Had had several attacks of gonorrhœa, the last one some three years since. Thirteen years ago the stream began to grow smaller and broken up. This condition gradually became worse, until one year since the stream became reduced to a mere dribbling, micturation more frequent and difficult. Three months previous to entering the hospital urine began to escape involuntarily and constantly, drop by drop. Examination January 28, 1886, revealed a generally contracted condition of the urethra, most marked at a point about 2 centimetres posterior to the meatus, and also on the membranous portion. Through the first constriction a No. 4 English sound could be passed, but the sound could not be made to pass the strictured part in the membranous portion of the urethra. Filiform bougies were used with the same lack of success. The membranous portion had apparently become much softened except where strictured, but the strictures themselves were of almost cartilaginous consistence. Some bleeding followed the necessary introduction of instruments for purposes of examination. Six hours after introduction of sound patient was taken with a severe chill, which promptly yielded to appropriate treatment. As a result of the slight dilation effected he was enabled to pass his urine in a small stream and to control his urinary evacuations almost perfectly, micturation being very frequent, however. Examination of the bladder revealed no retention of urine, and the amount passed was within the normal limits. No albumen or casts. February 4, patient having apparently fully recovered from the effects of the urethral fever following the first attempt at introduction of sounds, it was again essayed to reach the bladder, but without any greater success than attended the first attempt. Six hours after, patient was taken with another chill, followed by high fever, which promptly yielded to appropriate treatment. For the following week patient complained of not feeling well, but nothing of a serious nature could be discovered beyond the local trouble, and that had been apparently much benefited by treatment, as he could now make a stream of water and he no longer urinated involuntarily. His perineum was repeatedly and carefully examined, but nothing abnormal discovered. Urine normal, except the presence of a small quantity of pus. February 11 some neuralgia of the bronchial plexus suddenly made its appearance. Careful examination of all the joints yielded negative results.

February 12.—The left knee joint was found to be somewhat swollen and painful, but no fluid could be detected. Evening temperature, 39° C. No rigor preceding.

February 14.—Knee the same. Inner side of ring finger, left hand, swollen and painful just below metacarpo phalangeal articulation. No evidence of fluid. Morning temperature, 38° C.; evening, 38.2° C. Knee same. No rigor. Neuralgia of arm disappeared. Other joints apparently in normal condition. On the 17th, pus having formed in the connective tissue of the finger previously mentioned, an incision was made allowing the escape of a few drops of laudable pus. Knee contained small quantity of pus, which was removed by hypodermic syringe, and the joint afterwards painted with tinct. iodine, which reduced the swelling. Since the 24th the temperature had not risen higher than 38.6° C. No swelling or tenderness of perineum. Control over bladder began to be lost from this date, and the urine to dribble away as before.

February 23.—Severe rigor. Small quantity of pus removed by hypodermic syringe from left knee. Apparently no trouble in perineum. Abscess of finger healing rapidly. Evening temperature, 38.8° C. Carphologia.

February 26.—The right knee became involved and right testicle swollen and painful. No swelling or pitting of perineum could be detected, but a small soft catheter failed to reach the bladder, as it evidently became engaged in a pocket at the membranous portion of the urethra, a few drops of pus escaping through the catheter at the time. Withdrawing the catheter a short distance and pressing over the region of the bladder caused about 50 C. C. of urine to make its escape.

February 27.—Abscess of finger entirely healed. Both knee joints freely opened on outer aspect, allowing the escape of 40 C. C. of laudable pus from the left and 10 C. C. from the right knee. Perineum slightly boggy. No extravasation of urine. Patient delirious and failing rapidly. Temperature varies from 36.2° C. to 38.6° C. daily.

March 1.—Pneumonia right lower lobe developed. Died March 2, 2.10 P. M.

Autopsy (*fourteen hours after death.*)—*Rigor mortis* marked. Body emaciated; skin, especially of face, of sallow tint. Chest: Left lung normal except for a single thin band of adhesion over outer side of upper lobe between the layers of pleura. Some hypostatic congestion. Right lung: Pneumonic consolidation of lower lobe, and lower anterior edge of middle lobe. These portions of the lung were evidently on the verge of breaking down; pleura around diseased region, especially over diaphragm, strongly adherent; no fluid. Heart: Smaller than normal. Advanced fatty degeneration, especially of right heart, which moreover was covered with a rather tough and wrinkled layer of fatty tissue. Left heart free from clot, walls thick, cavity smaller than normal. Right heart occupied by very extensive fibrinous clot continued through the tricuspid valve into the ventricle, being attached at numerous points to the walls of both cavities, chordæ tendinæ, and to the free edges of the valves. From the ventricle it was prolonged through the pulmonary valves, to which it was similarly attached, into the artery, occupying about one-third the lumen of the vessel; it was continued into the two branches of the pulmonary artery. In one, at least, of these two branches it reached far enough to follow the first bifurcation. Abdomen: Liver lighter in color than normal; fatty; thicker than usual from above downward; capsule in parts thickened; several more or less linear furrowlike depressions, giving an appearance of partial lobulation. At several points whitish cicatricial spots were observed, such as might be left from inspissation and absorption of degenerate morbid products. Spleen: About normal in size; soft fatty, with one apparently old ab-

scess superficial, the size of a hazelnut, and full of thick curdy matter, a part of which, more inspissated than the rest, had become a true caseous residue. Kidneys: About normal in size and appearance. One section presented a pale, somewhat yellowish or fatty appearance both in pyramids and cortex. Ureters were normal. Bladder: Walls much thickened; sacculated in places; crossed internally above trigone by irregular muscular folds. Membrane thickened; discolored; bathed in slimy pus. Capacity of cavity from 50 to 75 C. C. Contained about 75 C. C. milky urine. Urethra of small caliber throughout. In front of seat of stricture, in the membranous portion, were found several pockets; just at the stricture, which was situated in the membranous portion, the opening into the urethra, was found an extensive perineal abscess, which had dissected its way downward and forward so as to almost surround the tunica vaginalis. The scrotal sac of the right testicle contained a small quantity of pus, and the testicle itself was much inflamed. This abscess was situated beneath the deep layer of the perineal fascia, around the base of the bladder, prostate gland, vesiculæ seminales, and vasa deferentia, thus accounting for its lack of detection during life, and the inflammation of the right testicle. As to the stricture itself, the narrowest part was no doubt involved in the destructive process surrounding it; immediately above and below it the canal was greatly narrowed. *a*

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STRANGULATED UMBILICAL HERNIA.

E. D.; aged 49; nativity, Ireland; admitted to Marine Hospital, Saint Louis, Mo., August 30, and died September 11, 1885.

Originally admitted April 1, 1885, with cirrhosis of liver and ascites of considerable duration. At the umbilicus was a globular, pedunculated protrusion of the abdominal wall, about the size of a man's fist, communicating with the cavity of the abdomen and containing fluid only; it could be emptied by pressure, but immediately refilled. The ascites was gradually disappearing under the use of diuretics and cathartics, rendering the abdominal wall and with it the umbilical tumor somewhat flaccid, when, on August 29, during an attack of coughing (or vomiting) the gut was forced into the sac and became strangulated. (A bandage had been worn for some time to prevent this very accident. The patient had gotten out of bed in the early morning to have a stool, and did not have the bandage on at time.) All efforts at reduction having failed, an operation by dissection and incision of the hernial opening was made on the 30th, thirty-six hours after the strangulation occurred. Ether was the anæsthetic employed. On opening the sac we were surprised to find the gut, a knuckle of about 6 inches, already gangrenous. The advisability of resection was discussed, but on account of the extremely feeble condition of the patient a longer continuance of the anæsthetic was deemed inadvisable, and it was thought better to attempt the establishment of an artificial anus, with the prospect of a future operation in case of success. The stricture was divided, the gut laid open and left *in situ*. A nourishing diet and small doses of opium were ordered. The patient rallied fairly from the operation, but gradually sank, dying twelve days later from exhaustion.

a See Banks "On certain rapidly fatal cases of urethral fever after catheterism," Edinburgh Med. Jour., June, 1871, p. 1074.

Autopsy.—Body much emaciated; skin sallow; *rigor mortis.* Stomach: Lining membrane dark red, soft, and easily torn. Peritoneum: Evidences of chronic peritonitis, especially in region of liver. Great omentum almost entirely disappeared, only a few shreds remaining, and of very dark color. Mesentery very red. Intestines: Greater portion of small intestines darkly congested. The stricture was found to have been situated 12 inches from the ileo-cæcal valve. An artificial anus had been established by the adherence of the two ends of gut to the edges of the abdominal wound. Large intestine normal, but empty. Liver decreased in size, and firmly attached to diaphragm. Capsule opaque, very much thickened, with circular depressions, varying in size from a pin's head to one-fourth inch, very abundant. Kidneys normal. Spleen atrophied.

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EXTENSIVE SCALD FROM STEAM.

J. C.; aged 45; a native of Virginia; admitted to Marine Hospital, Wilmington, N. C., April 7, 1886.

History.—Was scalded by the bursting of a tube in the boiler of the steamer Resolute. His clothes were all blown off, except a cotton jumper. His burns involved the skin only. His face, ears, hands, and whole body, from his umbilicus to his toes, were denuded of skin. The nervous prostration was extreme. He soon became delirious and semi-comatose. His failure was rapid and constant. He died on the 17th.

Autopsy.—There were two congested patches in the small intestines. Vessels of brain were congested; there was considerable fluid in the arachnoid; this markedly evident over vertex. Organs all healthy. Weight of organs: Brain, 1,305 grammes; heart, 350 grammes; right lung, 690 grammes; left, 617 grammes; liver, 2,060 grammes; right kidney, 207 grammes; left, 212 grammes; spleen, 189 grammes; pancreas, 115 grammes.

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MULTIPLE INJURY.

Fracture Right Femur; Fracture Left Ilium, comminuted, and Contusion of Abdomen and Thighs.

J. S.; aged 25 years; colored; nativity, North Carolina; admitted to Marine Hospital, Wilmington, N. C., February 21, 1886.

History.—He was suffering intense pain in back and hip. He said both legs were broken. The least motion gave intense suffering. Right femur broken in the middle. Left leg not broken, but left pelvis broken. Pulse not detected at wrist; morphine given with brandy subcutaneously; brandy by rectum; side splint to thigh; heat to extremities; aromatic spirits amm. and brandy were freely given; there were no signs of reaction. He died at 2 A. M., February 22, twelve hours after the injury.

Autopsy (twelve hours dead).—Rigor mortis well marked. Legs and body covered with bruised patches, which only involved the epidermis. The cutis vera was not penetrated in any place. The body was of a negro of fine physique, weighing 177 kilogrammes. The skin, though unbroken, was completely separated from the deep fascia over the abdominal muscles from the navel above to the ilii and symphisis below and the quadrati lumborum laterally. This cavity was full of blood,

with some pus. The abdominal muscles were not infiltrated with blood, but blood was infiltrated between the transversalis fascia and the peritoneum. The muscles on both thighs were badly lacerated. The left sartorius was torn from its origin. The left ilium was broken into eight or ten pieces. The femoral vessels were stretched so that the inner coat of the artery was broken. Right femur broken in its middle transversely; bladder not injured; all organs healthy, but pale and apparently bloodless. Heart stopped in systole, with cavities empty.

Weight of organs: Right lung, 478 grammes; left, 415 grammes; heart, 360 grammes; liver, 1,160 grammes; thymus, 31 grammes.

CASE 2.

W. W.; aged 35; nativity, Norway; admitted to Marine Hospital, Chicago, Ill., October 4, 1885; died October 5.

Cannot give any account of how injuries were received; mind confused; admits as to having been intoxicated for several days; body more or less contused; nearly all the ribs on left side broken, and there is considerable emphysema; effusion of blood under scalp, and large scalp wound; discharge of blood and serum from left ear; bloody urine voided.

Autopsy.—Rigor mortis present. Body covered with ecchymotic spots; left pleural cavity filled with blood; second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, and eleventh ribs on left side fractured, each rib in one or more places. Sharp fragments of the third, fourth, and fifth ribs had penetrated the pleural wall and made several deep lacerations in the lung tissue; areolar tissues of chest and abdomen emphysematous; capsule of left kidney ruptured and extensive laceration of the organ.

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FRACTURE OF BASE OF SKULL.

Multiple Injury.

K. C.; aged 27; nativity, Scotland; admitted to Marine Hospital, San Francisco, Cal., November 14, 1885; died November 21.

Autopsy.—Rigor mortis well marked; body well nourished; ecchymosis surrounding both eyes, rather more extensive around right eye; plaster splints on right arm, left forearm, and right leg, including foot. On dissecting up the scalp the blood-vessels were found dilated and filled with semi-fluid, dark-colored blood. At a point just over the lower part of the right frontal eminence a fracture involving both plates was found. This fracture extended downwards and inwards, through the superciliary ridge and supraorbital foramen into the orbit; thence through the orbital plate, backwards and inwards, losing itself in the ethmoido-frontal suture, just back of the anterior ethmoidal foramen. The fragments of the outer plate were but slightly depressed. Upon opening the skull the dura mater was found deeply congested and adherent to the bone, especially over both anterior lobes. The subarachnoid space was filled with sero-purulent fluid, and the membrane was covered with numerous patches of organized lymph. The blood-vessels of the pia mater were greatly dilated and filled with dark, semi-fluid blood. Corresponding to the frontal eminences, a patch, the size of a silver dollar, of each anterior lobe was softened and broken down. The ventricles were filled with fluid in which were considerable pus and nu-

merous flocculi of lymph. The cerebellum was much softened, as was likewise the entire encephalon. On removing the brain the following fractures were found: On the right side, the fracture of the frontal bone already mentioned. It continued backwards from the foramen cæcum, following the ethmoido-frontal suture, through the base of lesser wing and body of sphenoid, the optic foramen, and cavernous groove, far into the carotid canal. The anterior clinoid process was broken off and held in place by the membranes only. The middle clinoid processes and the intermediate portion of bone were in a like condition. On the left side a fracture began in the ethmoido-frontal suture, and extended backward, as on the right side, except as follows: The posterior portion of the lesser wing of the sphenoid, including the anterior clinoid process, was fractured for about 3 centimetres, and the apex of the petrous portion of the temporal bone was broken off just external to the internal auditory meatus, the fracture here extending completely through the bone. The right os calcis and the adjacent portions of the astragalus and scaphoid were in a comminuted state.

NOTE.—This seaman (British) was a strong, robust man. I learned from his captain that he fell from the mast to the deck, a distance of about 65 feet; that when picked up he was insensible, and that blood gushed freely from mouth, nose, and ears. He was unconscious upon admission to hospital, and remained so to the last. A discharge, apparently bloody serum (cerebro-spinal fluid), continued more or less free from nose and ears during life. For two or three days he was very restless, and struggled considerably at times, and in order to protect the tissues contiguous to other fractured parts, immovable splints of plaster of paris were applied. It was noticed that the pupils were very slightly contracted at times, the right rather more than the left. The right side became paralyzed about the sixth day, and the patient gradually passed into a profound coma and died. The temperature ranged from 36° C. to 40.3° C. Considering the nature and extent of the several injuries sustained in this case, it is somewhat remarkable that the patient survived eight days.

CASE 2.

W. C.; aged 30 years; admitted to the marine ward of Saint Joseph's Hospital, Saint Paul, Minn.; died October 20, 1885.

Autopsy (10 *a. m.*, *October* 27, 1885).—Subject well nourished. *Rigor mortis* well marked. An extensive contusion of the scalp, extending well over the right parietal bone. In the center of this contusion a crucial incision, exposing the bone, made by surgeon twenty-four hours before death, for the purpose of trephining the skull. Calvarium removed. Dura mater found rather more adherent than normal to the calvarium. A circular trephine hole in the center of right parietal bone. Removing the dura, it was found adherent to the arachnoid, especially along the posterior border of the fissure of Sylvius on the right side. The vessels of the arachnoid were found very much congested over the same area. Removing this membrane the subarachnoid space was found filled with a bloody effusion covering the greater part of both hemispheres, but especially well marked over the cerebellum. The arachnoid was a trifle thickened and adherent to the pia mater, over a surface corresponding to the first, second, and third temporal convolutions on the right side. Upon section, the cerebellum and the brain substance underlying the three temporal convolutions mentioned were found slightly softened, otherwise the brain tissue normal. Removing the dura mater covering the base of the skull, a fracture was found starting from the torcular Herophili and extending forward so as to completely encircle the foramen magnum. The fracture was confined to the occipital bone, entering the jugular foramen upon the left side. Thoracic and abdominal cavities not opened.

Diagnosis.—Compression of the brain by blood clot, due to fracture of the base of the skull.

CASE 3.

H. C.; admitted to marine ward, General Hospital, New Haven, Conn., January 1, 1886; died March 14.

The injury for which the patient was admitted was received December 31, 1885. The following symptoms were noted: Comatose; hemorrhage from the left ear; paralysis of the left arm; facial paralysis on the left side; slight abrasion upon the left parietal protuberance. The patient gradually emerged from his coma, but did not at any time regain full consciousness. Whatever improvement may have been noted during the first month disappeared and the patient died, the symptoms pointing clearly to cerebral softening.

Autopsy (*March* 15, 1886).—Fracture of the skull 2½ inches above the left ear and a little back of it, the fracture extending downward into the petrous portion of the temporal bone. On the inside of the skull and opposite the fracture there was marked inflammation, and a false membrane had formed between the dura mater and the arachnoid over most of the right hemisphere. The lower portion of the parietal lobe of the right hemisphere was adherent to the dura and disclosed yellow softening, as did also the inferior frontal convolution upon the same side.

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GUNSHOT WOUND OF NECK.

Ball in Vertebral Canal.

J. F.; aged 26 years; a native of Pennsylvania; was admitted to the Marine Hospital, Detroit, Mich., June 21, 1884.

Diagnosis.—Debility; cause obscure.

History.—He gave a history of having received a pistol-shot in the back of the neck in the month of February, 1884, while engaged in a row in a saloon in Pittsburgh. Was sent to hospital and discharged recovered April 1. Came to Detroit in May and sailed on the lakes until June 20. He had not been entirely free from "weakness since he received his wound," and had frequent attacks of "nervous spells," which consisted of tremors of short duration. These increased after his admission, and by July 1 were constant, and the case was one of rather severe paralysis agitans, in which agitans of the head was included. He complained of pain in the posterior part of his head, which was constant but varying in degree; July 5 he had a convulsion, and another on the 7th, after which he remained in a semi-conscious condition until July 10, when he gave a loud scream at 8 A. M., and a severe convulsion ensued. Three other severe fits occurred during the forenoon, and were followed by profound coma. He died at 9 o'clock P. M.

Autopsy (*July* 11, *thirteen hours after death*).—*Rigor mortis* marked. Suggillations on posterior part of body. Membranous covering of the brain much congested. After removal of the brain and examining upper part of cord through the foramen magnum a bullet (.32-caliber) was discovered pressing against the cord. The membranes were stained a dark lead color for a distance of three inches. The bullet had been

encysted and rupture of the cyst had occurred with discharge of the contents. The body of the axis had been fractured in two places one-half inch apart and reunion taken place. The ball had entered between the atlas and axis, fracturing the former and lodging just inside and in contact with the cord. All symptoms were due to gradual increase of size of the cyst around the bullet, and death was caused by its rupture. All other organs healthy.

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FRACTURE OF BODY OF FOURTH DORSAL VERTEBRA.

J. V. K.; aged 45 years; nativity, United States; admitted to the marine ward Saint Luke's Hospital, Duluth, Minn., August 19, 1886.

Patient was knocked into the hold of the steam barge Australasia by an iron bucket used to hoist coal from the vessel to the docks above; it weighs about 1,500 pounds, is hoisted with a wire rope, and runs on rollers; the crane that extends over the vessel hangs at an angle of about 45 degrees, and is from 12 to 20 feet above the boat. As the patient was walking along past the hatch the bucket struck him on the back, and he fell about 16 feet into the hold, striking on his head and right arm.

At 6.30 P. M., one hour after the accident, I found him conscious, but completely paralyzed from the fifth rib down; respiration labored. His fellow-seamen on the vessel said that he was unconscious for about five minutes after the fall.

20th.—Rested well all night, but could not be moved without causing him great pain. 9. A. M., an anæsthetic was administered and a careful examination made. We found the greater part of the interscapular region badly contused, but could not find any dislocation or fracture of the spine.

Diagnosis.—Injury to the cord without known fracture. Rested well all day and night. He was catheterized at 7 A. M. and 6.30 P. M. Urine normal.

21st.—Bowels have not moved yet; gave 20 C. C. of castor oil; had a free movement at 4 P. M.; catheterized him every six hours; he feels comfortable, but has an anxious expression. The paralysis appears to be extending upwards, and respiration somewhat more impaired.

22d.—Has rested well up till 3 A. M., when he became delirious, which lasted for about three hours, after which he became comatose. At 8 A. M. there was a great change; diminished respiration; paralysis extending up to the third rib; the sphincters completely relaxed; passed his urine and fæces continually.

23d.—Same as yesterday. Died at 6.30 P. M.

Autopsy.—Body of a stout, robust man, weighing over 200 pounds. A transverse fracture of the body of the fourth dorsal vertebra existed, with both peduncles crushed and penetrating the cord, as there was no displacement of the body of the vertebra. The cord above the fracture was greatly congested and covered with a purulent exudation. Brain congested, but otherwise normal. Lungs almost solid, with the exception of the upper lobes, and would not float on the water. Heart normal. Abdominal cavity normal, but somewhat congested.

CONCUSSION OF SPINAL CORD.

CASE 1.

J. A.; age 46; nativity, Sweden; admitted to Marine Hospital, Port Townsend, Wash., February 20, 1886; died March 2.

History.—Gives a history of having fallen a distance of 20 feet, striking on his head and back on the edge of the hold. Upon admission semi-conscious. No personal history could be obtained. Urine had to be drawn four times in every twenty-four hours, and bowels incontinent.

Autopsy (eighteen hours after death).—*Rigor mortis* present in upper extremities; none noticeable in lower. Examination of encephalon showed nothing noticeable except some slight hyperæmia localized in the third left frontal convolution. Examination of spinal cord showed a breaking down of the cord localized at juncture of lumbar vertebræ, about 1 inch in length. Cord was softened, and membranes adhered to each other.

CASE 2.

W. L.; aged 21 years; nativity, Maryland. Admitted to marine ward, Saint Joseph's Hospital, Baltimore, Md., August 18, 1885.

Clinical history.—Patient complained of severe pain and heat on right side of the neck. Dated his illness from one week back. Was seized with a chill one day before applying for relief. Positively denied ever having syphilis, and gave a very good family history. Manipulation caused pain. Considerable induration extended from the sternoclavicular junction upwards along the posterior border of sterno-mastoid muscle, and there was present much swelling and induration over the shoulder and anterior portion of arm. The inguinal glands were also found swollen, but in none of the swellings could fluctuation be noticed. Temperature, 39° C.; pulse, 98. On the 20th, patient asked to sit up. No fluctuation as yet noticed. On the 21st, symptoms of exhaustion set in; slight delirium and restlessness, with much dyspnœa, developed. Stimulation failed to regain the declining vitality, and the patient succumbed, with profuse perspiration, diarrhœa, and relaxation of the sphincters.

Autopsy (thirty hours after death).—Body emaciated; lungs congested posteriorly, but healthy. Pericardium distended with serum slightly tinged with blood and containing large quantities of flocculent lymph. Internal surface of pericardium and external surface of heart covered with a layer of lymph. A small abscess was found in the anterior wall of the right ventricle. Kidneys much congested, and a number of small abscesses were found in the cortical substance. The abscess in the neck extended downwards to sternal end of clavicle, baring the bone of its periosteum for some distance; this cavity contained about 10 C. C. of sanguineous pus.

CASE 3.

F. S.; born in United States; aged 17; was admitted to the marine ward, Sisters' Hospital, Buffalo, N. Y., May 1, 1886; died May 4.

This man fell down the hatch of his vessel and struck the keelson, the force of the fall coming upon the sixth and seventh cervical vertebræ, as was shown by the marks upon his body. He was carried to the hospital in a semi-conscious condition, but his body completely paralyzed.

His respiration was very slow, but twice to the minute, and his pulse rapid but very weak; his skin cool and very moist. His urine dribbled from him; also his fæces were passed involuntarily. His mind became quite clear in a few hours, and he talked a little. After the second day he became comatose, and remained in that condition till his death at the end of the third day. No autopsy was allowed by his family, but it was permitted to cut down upon the spine and ascertain that there was no fracture or dislocation of the vertebræ, and his death was attributed to concussion of the spine.

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NECROSIS LOWER JAW.

S. W. R.; aged 51; nativity, England; entered the Marine Hospital at New Orleans, La., October 26; died December 4, 1885.

Entered hospital with a small sinus leading from under the angle of the jaw to an old fracture of the inferior maxilla. Two and a half centimetres of bone were removed and the ends wired together. Septicæmia supervened, and patient died December 4, 1885. Uræmic symptoms came on near the close of life.

Autopsy (twelve hours after death).—Rigor mortis slight. Body in fair general condition; bones of inferior maxilla where resected are about 3.5 centimetres apart, the ends of both fragments being necrosed. The wire had almost cut out of the distal fragment; both ends of bone and the track of the wire were bathed in pus, thin and unhealthy looking. A sinus also ran a small distance down the neck, where it had been opened during life. Normal amount of fluid in pericardium. Heart covered with fat; valves normal. Heart muscle normal. Lungs: Left lung adherent to chest-wall; right lung free; some consolidated tissue in apex of left lung, old; apex and lower edge of right lung emphysematous. Hypostatic pneumonia in the stage of red hepatization over almost all of the middle lobe of right lung and over posterior portion of inferior lobe. Liver regularly and beautifully cirrhosed, though but little diminished in size, only 212 grammes under normal weight. Gall-bladder empty. Kidneys: Capsules not adherent; lobular markings too prominent; somewhat smaller than normal (not weighed), the diminution being in the cortical portion. Intestines healthy. Other organs not examined.

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PSOAS ABSCESS.

Round-celled Sarcoma of Kidney.

J. H. H.; aged 30 years; nativity, South Carolina; admitted to the Marine Hospital, Boston, Mass., December 8, 1885; died January 28, 1886.

History.—Patient was first troubled with a tumor about size of an orange, which formed in the groin, was opened, and continued to discharge pus in large quantity until the termination of his life. The abscess was opened about one year before he entered this hospital. At the time of his admission to hospital he was suffering from hectic fever and chills; an abscess was discharging through a sinuous opening a little below the anterior superior spinous process of the ilium. Patient complained of pain in the lumbar region, through the abdomen, and occasionally severe attacks of headache.

Autopsy.—Rigor mortis present, and body greatly emaciated. Large cicatrix extending from the anterior superior spinous process of the ilium to the right groin, and sinuous opening near its center. Small intestines inflamed throughout their entire length, and patches of the mucous membrane denuded in several places. Firm peritoneal adhesions between coils of small intestines, due to imflammation. Right kidney removed with difficulty, it being firmly bound to spine by a tumor. The tumor was about the size of a large orange; formed around the pelvis of the right kidney and ureter, and firmly attached to the body of the vertebræ posteriorly by fibrous bands passing through the substance of the tumor. It was firm in consistence, nodular; not encapsuled; granular, and not unlike in appearance the substance of a granular kidney. Microscopic appearance: The tumor was formed of a homogeneous substance, composed chiefly of round cells. A very few oval cells without definite arrangement were observed. Careful examination proved it to be a round-celled sarcoma, springing from the ureter and pelvis, of the right kidney. The sarcomatous tissue was disseminated throughout both kidneys, which had in patches undergone caseous degeneration. Both kidneys were quite large, the right weighing 270 grammes, the left 250 grammes. The cortical substance and pyramids of both kidneys greatly congested, and yellow granular patches found in each. An abscess of the psoas muscle on the right side was found, discharging through the sinus, opening in the right groin. Several vertebræ were removed and carefully examined, but they were found healthy. The abscess may have been caused by pressure of the tumor upon that muscle, but this would attribute a rather long period of growth to a round-celled sarcoma. Brain not examined.

ABSTRACT

OF THE

CONCLUSIONS ADOPTED AND PROPOSITIONS REJECTED

BY THE

TECHNICAL COMMISSION

OF THE

INTERNATIONAL SANITARY CONFERENCE OF ROME.

MADE IN ACCORDANCE WITH A RESOLUTION ADOPTED
BY THE CONFERENCE

BY

JACOB MOLESCHOTT, M. D.,

DELEGATE FROM ITALY AND PRESIDENT OF THE TECHNICAL COMMISSION,

AND

W. ERHARDT, M. D.,

DELEGATE FROM GERMANY.

TRANSLATED FROM THE FRENCH

BY

GEO. M. STERNBERG, M. D.,

MAJOR AND SURGEON U. S. ARMY,

DELEGATE FROM THE UNITED STATES TO THE INTERNATIONAL
SANITARY CONFERENCE.

LETTER OF TRANSMITTAL.

JOHNS HOPKINS UNIVERSITY,
Baltimore, Md., August 31, 1885.

Hon. T. F. BAYARD,
Secretary of State:

SIR: I have the honor to transmit herewith a translation of the *Relevé des conclusions adoptées et des propositions rejettées* by the Technical Commission of the International Sanitary Conference of Rome.

I would respectfully request that if this translation is printed I may be permitted to revise the proof.

Very respectfully, your obedient servant,

GEO. M. STERNBERG,
Major and Surgeon, U. S. A.,
Delegate to International Sanitary Conference.

PREFACE.

The undersigned have the honor to present to the International Sanitary Conference of Rome the following *résumé* of the *conclusions adopted and of the propositions rejected* by its technical commission.

The conclusions adopted are numbered in such a way that they may be read with facility, while the propositions rejected are indicated by the letters of the alphabet, and are placed near the conclusions adopted to which they relate. In accordance with the request of the conference the undersigned have included the propositions of the minority, and are entirely convinced of the necessity of this course. Besides the right to record its convictions, it is proper to notice that the minority has most frequently included two elements, one of which exacted more and the other less than the majority saw fit to admit. This explains in part why the number of the majority has been rather variable; certainly for the other party this variability has depended largely upon the abstentions from voting, which have been sometimes quite numerous.

It is proper to recall the fact that the technical commission from the commencement of its labors decided to occupy itself in the first place with cholera. There were even some states which had sent their delegates especially for the study of questions relating to cholera. Time has only permitted the technical commission to occupy itself with yellow fever in a secondary and extremely brief manner. The other epidemic maladies (pest, small-pox, &c.) have only been considered *en passant.*

The desire not to enter upon the discussion of questions of pure science, which from the outset would have made it impossible to come to an agreement, has controlled the technical commission in all of its discussions. On the other hand the commission has done its best not to encroach upon the domains of the executive power, which has only asked it for practical counsel based upon hygiene.

W. ERHARDT.
JAC. MOLESCHOTT.

ROME, *July* 21, 1885.

RÉSUMÉ OF THE CONCLUSIONS ADOPTED AND OF THE PROPOSITIONS REJECTED BY THE TECHNICAL COMMISSION OF THE INTERNATIONAL SANITARY CONFERENCE OF ROME (1885).

I.—SANITARY INFORMATION.

1. In each country there should be a central bureau of sanitary information and notification. All of these bureaus should be in regular correspondence with each other.

Adopted by 18 affirmative votes against 1 negative (Switzerland) and 1 abstention (Holland).

2. The technical commission expresses the wish that the International Sanitary Conference may affirm the necessity of publishing an international statistical bulletin for each important city. This should be uniform as to its basis and form, and should show each week the total number of deaths, the number of deaths caused by each of the epidemic diseases, and particularly from cholera and from yellow fever.

Adopted unanimously, with the exception of the delegate from Turkey, who abstained from voting.

3. The first cases of cholera or of yellow fever which appear in a locality, and especially in the maritime ports, should be reported at once, by telegraph, to the different Governments.

Adopted unanimously.

II.—SANITARY PROPHYLAXIS AGAINST CHOLERA.

4. General sanitation, and isolation, real and complete—in the measure indicated by science—of every thing which might introduce the disease, are the best means of preventing the importation and propagation of cholera.

Adopted in principle.

Disinfection.

5. The Commission recommends, as means of disinfection against cholera, besides destruction—

(1) Steam at 100° C.

(2) Carbolic acid, chloride of lime.

(3) Aëration.

Carbolic acid and chloride of lime are to be used in aqueous solution:

Weak solutions: Carbolic acid, 2 per cent.; chloride of lime, 1 per cent.

Strong solutions: Carbolic acid, 5 per cent.; chloride or lime, 4 per cent.

These means of disinfection will be applied as follows:

I. For the disinfection of persons the weak solutions should be employed.

II. For the disinfection of clothing, bedding (*des linges, des habits, des couvertures*), and other articles of this kind:

(*a*) destruction; (*b*) steam passed through the articles for one hour; (*c*) boiling for thirty minutes; (*d*) immersion for twenty-four hours in one of the weak disinfecting solutions; (*e*) aëration for three or four weeks, but only in case the other means recommended are inapplicable.

Articles of leather, such as trunks, boots, &c., should be either destroyed or washed several times with one of the weak disinfecting solutions.

III. Vomited matters and the dejections of the sick should be mixed with one of the strong disinfecting solutions, in quantity at least equal to the amount of material to be disinfected. Linen, clothing, bedding, &c., recently soiled by the dejections of the sick, which cannot be immediately subjected to the action of steam, should be at once immersed in one of the strong disinfecting solutions, and left for four hours.

IV. The dead should be enveloped in a sheet saturated with one of the strong disinfecting solutions, without previous washing of the body, and at once placed in a coffin.

V. Disinfection of merchandise and of the mails is unnecessary (steam under pressure is the only reliable agent for the disinfection of rags—(*les chiffons en gros*).

VI. When cases of cholera occur upon a vessel at sea, the locality where the case occurs should be disinfected. The floors and walls of the cabin, or other locality, should be washed at least twice with one of the weak disinfecting solutions, and then exposed freely to fresh air.

In the case of objects of considerable value, which have not been in immediate contact with the sick, and which would be seriously injured by a rigorous disinfection, the physician on board may determine what measures are necessary to protect the sanitary interests of the vessel.

The bilge-water should be pumped out, and replaced by sea-water, at least twice at each disinfection of a vessel.

The *closets* should be well washed with one of the strong disinfecting solutions at least twice a day.

VII. If the drinking-water is open to suspicion, it should be boiled before it is used, and the boiling should be repeated if it is not used within twenty-four hours.

All suspected food should be destroyed, or at least recently cooked.

VIII. Hospitals should be disinfected by washing the floors and walls with one of the weak disinfecting solutions, by a subsequent free ventilation and cleansing, and finally by repainting. The wards to be disinfected should, as far as possible, be isolated from those in use.

The latrines should be disinfected at least twice a day by pouring into them the strong disinfecting solutions in quantity at least equal to the amount of the dejections received since the last disinfection.

IX. The clothing worn by physicians and attendants should remain in the hospital, and should be regularly disinfected.

Physicians and attendants should use the weak disinfecting solutions for washing their hands, &c.

Adopted unanimously, with the exception of the delegate from Turkey, who abstained from voting.

A.—Sanitary Prophylaxis upon Land.

6. Land quarantines and sanitary *cordons* are useless.

Adopted by 20 affirmative against 1 negative vote (Turkey).

7. In order to prevent the development of cholera and its propagation upon land, it is necessary—

(1) To attend to general sanitation everywhere and at all times, to isolate the first cases, and to disinfect. The means of isolation and of disinfection should be prepared in advance under the advice of the sanitary authorities.

(2) To announce immediately every declared or suspected case of cholera to the proper authority, according to the laws of the country, and to have the nature of the disease verified by competent physicians, or the cause of death by an autopsy.

(3) There should be in every country an organized medical hygienic service. Officers of this service should be stationed in the districts and in the principal cities in sufficient number to bring every inhabited locality within the scope of this hygienic supervision.

(4) The sanitary authorities of the different countries should be able to communicate with each other directly, without an intermediary, whenever they find it necessary, in order to obtain information or to agree upon urgent measures to be taken.

Adopted unanimously.

8. In time of cholera particular attention should be paid to the highways upon which those sick with cholera might travel, and to the principal points of arrival, in order to apply in good time necessary sanitary measures, isolation of the sick, and disinfection.

Adopted unanimously.

9. At the principal stations upon grand land routes, which are passed over by numerous laborers or emigrants, physicians should, as far as possible, be stationed for the purpose of caring for the sick.

Adopted unanimously.

A. The rules of hygiene should be scrupulously executed on railway trains and at stations. A physician should be attached to each important station, which should be provided with a suitably isolated chamber for the reception of the sick.

Rejected by 13 votes (Austria, Hungary, Brazil, Denmark, Spain, Italy, Mexico, Holland, Portugal, Roumania, Servia, Switzerland, Turkey), against 8 affirmative (Germany, United States, France, Great Britain, India, Russia, Sweden, Norway).

10. Direct trains which pass through several countries should be changed in passing from an infected country to one which is free from the disease. They should be accompanied by a physician whose duty it is to take the necessary measures in case a traveler fall sick *en route.*

Rigorous cleanliness should be observed upon the trains and at railway stations. Each station should have at least one chamber separated from the rest, in which to receive patients temporarily.

Adopted by 10 affirmative votes (Austria, Hungary, Brazil, Denmark, Spain, Italy, Mexico, Portugal, Servia, Switzerland), against 6 negative votes (Germany, France, Holland, Roumania, Sweden, Norway), and 5 abstentions (United States, Great Britain, India, Russia, Turkey).

B. The entrance of passenger cars, and especially of sleeping cars, coming directly from infected localities should be forbidden. At all important stations and at each frontier station there should be a physician to care for the sick and for the medical inspection; a place for the isolation of the sick should also be provided. At custom-house stations every one should be obliged to leave the train for a medical inspection. The most vigorous neatness should be observed upon the trains and at the railway stations.

Rejected by 11 negative votes (Germany, Brazil, Spain, France, Great Britain, India, Portugal, Russia, Servia, Sweden, Norway), against 9 affirmative (Austria, Hungary, Denmark, United States, Italy, Mexico, Holland, Roumania, Switzerland), and 1 abstention (Turkey).

11. The disinfection of persons should be accomplished by means of disinfecting washes only, and will only be necessary in case they have been soiled by the dejections of cholera patients.

Adopted unanimously, with the exception of 1 abstention (Spain).

12. As everything which comes from an infected country is not necessarily infected, it will only be necessary to disinfect that which has been soiled, or which may have been in use by cholera patients, and especially linen, clothing, and rags.

Adopted unanimously, with the exception of 1 abstention (Turkey).

13. The general rules of hygiene, applicable at all times, should be followed with greater rigor than usual in time of cholera, and especially those relating to the agglomeration of individuals, the supplies for markets, provisions, drinking water, the transportation of the sick, the burial of the dead, &c.

Adopted unanimously.

B.—Sanitary Prophylaxis upon Rivers.

14. Ports upon rivers which receive sea-going vessels should be subjected to the same regulations as seaports.

Adopted unanimously.

15. Passenger boats upon large rivers should be subjected to a rigorous hygiene. Overcrowding with passengers should be strictly prohibited. A physician should be stationed at each important landing, and a properly isolated room should be provided at each station.

Adopted unanimously, with 1 abstention (Turkey).

C. Sanitary cordons placed along a great river are effective, because cause complete isolation of the sick can be realized.

Rejected by 13 votes (Germany, Austria, Hungary, United States, France, Great Britain, India, Italy, Holland, Russia, Sweden, Norway, Switzerland), against 5 affirmative (Spain, Mexico, Roumania, Servia, Turkey,) and 3 abstentions (Brazil, Denmark, Portugal).

C.—Maritime Sanitary Prophylaxis.

GENERAL SANITARY MEASURES.

Ports.

16. It is the interest of each nation to assure the salubrity of its seaports. It will often thus avoid the invasion of its soil by exotic maladies, and above all will rarely transport upon its vessels endemic diseases.

Adopted unanimously.

17. In each port it will be necessary to have at all times a sanitary authority, whose mission it shall be to furnish consuls official information relating to the sanitary condition of the port.

Adopted unanimously.

18. Consuls will be permitted to obtain from the bureaus of hygiene information relating to the sanitary condition of seaports and of cities.

Adopted by 10 affirmative (Austria, Hungary, United States, France, Italy, Mexico, Holland, Portugal, Russia, Switzerland) against 2 negative (Roumania and Turkey) and 8 abstentions (Germany, Brazil, Denmark, Great Britain, India, Japan, Sweden, Norway).

Ships.

Definition of terms "suspected ship" and "infected ship."

D. Will be considered as suspected—

Every ship not provided with a physician and coming from a locality or from a port where cholera exists.

Every ship which has, or has had, on board one or several deaths since her departure from a locality or from a port where cholera exists, if there is not a physician to certify as to the cause of death, will be considered as infected.

Every ship which has, or has had, on board one or several cases or deaths from cholera. If, however, the ship has a physician, if the voyage has lasted longer than ten days, if there has been no case of cholera during the last ten days, and if the necessary measures of isolation and disinfection have been taken, the ship will not be treated as infected, but as *suspected*.

If the ship has, or has had, on board a case of sickness which may be suspected of being cholera, the port physician will decide, after having consulted the physician of the ship, whether the ship should be treated as *suspected* or as infected.

A ship free from suspicion which has communicated with a suspected ship, and especially if it has received passengers from this latter, becomes *suspected*, and every ship which has communicated in the same manner with an infected vessel will be considered infected.

Countries, localities, and seaports are either immune or infected—never *suspected*.

Lost by 9 negative votes (France, Great Britain, India, Sweden, Norway, Holland, Roumania, Servia, Turkey) against 9 affirmative (Germany, Austria, Hungary, Spain, United States, Mexico, Portugal, Russia, Switzerland) and 3 abstentions (Brazil, Denmark, Italy).

19. Every ship destined for the transportation of passengers, which sails from a suspected port, should be properly constructed and should be provided with localities for the isolation of cholera patients.

Adopted unanimously.

20. Passenger steamers sailing from countries where cholera reigns should be provided with an apparatus for disinfection by steam.

Adopted unanimously.

21. Steamboats destined for the transportation of travelers coming from countries where cholera prevails should have on board a physician, appointed by the Government to which the vessel belongs, or by the sanitary authority, whose appointment is revocable only by this Government or sanitary authority, and who is completely independent of the companies of navigation or the owners of the vessel.

Adopted by 19 affirmative, with 2 abstentions (Sweden, Norway).

§ 1. MEASURES OF SANITATION AT THE PORT OF DEPARTURE.

SPECIAL SANITARY MEASURES.

Passenger steamers.

E. It is desirable that the sanitary state of ships about to sail be verified by a personal inspection made by an authorized agent of the country of destination.

Rejected by 9 negative votes (Austria, Denmark, Spain, Japan, Holland, Roumania, Russia, Servia, Sweden) against 2 affirmative (United States, Italy) and 11 abstentions (Germany, Brazil, France, Great Britain, Hungary, India, Mexico, Norway, Portugal, Switzerland, Turkey).

.22. The consul of the country of destination will have the right to assist at the sanitary inspections of the ship made by the agents of the territorial authority, in conformity with the rules which may be established by conventions or treaties.

Adopted by 8 affirmative votes (Austria, Hungary, Denmark, United States, Italy, Holland, Portugal, Sweden) against 6 negative votes (Great Britain, India, Japan, Roumania, Servia, Turkey) and 8 abstentions (Germany, Brazil, Spain. France, Mexico, Norway, Russia, Switzerland.

23. The loading of the vessel will not commence until it has been put in good sanitary condition, either by the ordinary means or by special measures of disinfection, if considered necessary. For this purpose it will be inspected by the captain and the ship's physician. The result of the inspection will be noted upon the ship's register.

Adopted unanimously.

24. The doctor will examine the passengers coming from a port where cholera prevails, and will refuse to receive on board those who appear to him to be *suspect.*

Adopted unanimously, except 1 abstention (Turkey).

25. He will see that those who appear to him to be in good condition do not bring on board linen, personal effects, or bedding contaminated or open to the suspicion of being so (*suspect*).

Adopted unanimously.

26. Clothing and bedding which have been in use by persons who have died of cholera should never be received on board.

Adopted unanimously.

27. When cholera shows itself on board a ship while it is at an infected port, those who show the first symptoms of this disease will be immediately sent to the hospital, and all of their effects, such as bedding, &c., which have been in use, will be destroyed or disinfected. The locality in which the sick are found will also be immediately disinfected.

Adopted unanimously.

28. The "sacks" inclosing the clothing of individuals who have died abroad will be disinfected before a vessel sails.

Adopted unanimously.

F. All of the personal effects of travelers about to sail from a port where cholera prevails should be disinfected.

Rejected by 18 votes against 4 (Spain, Italy, Portugal, Mexico).

Small vessels.

29. From a sanitary point of view it is necessary to distinguish two kinds of vessels: Those which have a physician, and those which have not. The latter should be considered small vessels (*petits navires*), whatever may be their tonnage and the number of their crew, whether they are sailing vessels or steam vessels.

Adopted unanimously with exception of Spain.

30. Before one of these "small vessels" is loaded the captain should request the consul of the country to which the vessel is destined to have his ship inspected by a physician, who should also examine his passengers before sailing. This inspection to be independent of that made by the sanitary authorities of the port.

Adopted by 20 affirmative against 1 negative (Brazil) and 1 abstention (Turkey).

31. The result of this inspection, together with directions as to measures of sanitation and disinfection required, will be recorded in the ship's register.

Adopted unanimously, except one abstention (Turkey).

32. Earth or porous material of any kind should not be used as ballast.

Adopted unanimously.

33. The captain should see that no infected or suspected articles of wearing apparel, personal effects, or bedding are permitted to come on board.

Adopted unanimously.

§ 2.—MEASURES OF SANITATION DURING THE VOYAGE.

PASSENGER STEAMERS (*grands paquebots.*)

Suspected vessels.

34. The soiled body linen of the passengers and crew should be washed at once, after having been immersed in boiling water or in a disinfecting solution.

Adopted unanimously.

G.—The soiled body linen of suspected individuals, either passengers or belonging to the ship, should be washed at once, after having been immersed in boiling water or in a disinfecting solution.

Rejected by 14 to 5.

[NOTE.—Evidently this proposition was rejected in favor of the more comprehensive one which precedes it, and not because the conference was opposed to the measures of disinfection proposed.—TRANSLATOR.]

35. The closets—"*lieux d'aisance*"—should be washed and disinfected at least twice each day.

Adopted unanimously.

36. Rigorous cleanliness and active ventilation should be maintained during the voyage on board suspected ships.

Adopted unanimously.

Infected ships.

37. As soon as the doctor observes the first signs of cholera he will immediately notify the captain, and in concert with him will take the necessary measures for the isolation of the sick.

Adopted unanimously.

38. The localities occupied by those who fall sick with cholera should be disinfected immediately.

Adopted unanimously.

39. As far as possible the localities thus disinfected should remain freely exposed to the air and unoccupied, and should not be assigned to any passenger in health during the balance of the voyage.

Adopted by 19 affirmative against 1 negative (Spain) and 2 abstentions (Great Britain and India).

*Small ships.**

40. During the voyage the captain should take all the measures necessary for the disinfection of the body linen of passengers and crew, for the isolation of the sick in case of cholera, and for the disinfection of localities. He should note all of this upon the ship's register.

Adopted unanimously.

41. In order that he may be able to properly attend to these requirements, the consul of his nation will place in his hands before his departure clear and concise sanitary instructions, to be hereafter drawn up. These instructions will be translated into the different languages and offered to the different governments for distribution.

Adopted unanimously, with 1 abstention (Brazil).

Special Regulations for the Red Sea.

PASSENGER STEAMERS.

Suspected ships.

42. All steamboats coming from cholera-infected ports beyond the strait of Bab-el-Mandeb will be subjected to a medical inspection in the Red Sea.

Adopted by 16 affirmative votes against 4 negative (Brazil, Spain, Great Britain, and India) and 2 abstentions (United States and Japan).

43. This inspection will be made by an independent physician belonging to the port.

Adopted by 17 affirmative against 1 negative (Spain) and 4 abstentions (United States, Great Britain, India, Japan).

44. If the ship's physician certifies that the necessary sanitary measures have been taken at the point of departure, and that proper measures of sanitation and disinfection have been observed during the voyage; that there has not been during the voyage a death from cholera or a recognized or suspected case; finally, if the medical examination made by the port physician permits him to certify that there is no one on board sick with this disease or suspected of being so, free *pratique* will be granted immediately.

Adopted by 17 affirmative against 1 negative (Spain) and 4 abstentions (United States, Great Britain, India, Japan).

* *Petits navires* (*i. e.*, those which have no physician on board).

The ships which are not to leave any passengers at the ports of the Red Sea, and particularly in Egypt, will be subjected to a medical inspection near Suez.

Adopted by 16 affirmative against 2 negative (Spain and Turkey) and 4 abstentions (United States, Great Britain, India, Japan).

H.—English merchant ships, troop ships, mail steamers, and others, which do not communicate with Egypt, or with any European port, should always be permitted to pass through the Suez Canal, without inspection, as through an arm of the sea.

Rejected by 18 votes against 2 (Great Britain, India), and 2 abstentions (Japan, Russia).

46. Ships which carry passengers destined for Egypt or for any other port of the Red Sea will be subjected to a first inspection near the Strait of Bab-el-Mandeb, and to a second at the first port of arrival.

Adopted by 17 affirmative against 1 negative (Spain), and 4 abstentions (United States, Great Britain, India, Japan).

Infected ships.

47. If the ship is infected, that is to say, if there is or has been one or more cases of cholera on board, the passengers will be disembarked and isolated in separate groups, each containing as small a number as possible.

Adopted by 18 against 2 (Great Britain, India), with 2 abstentions (Brazil, Japan).

48. The ship and the clothing and personal effects of the passengers and crew will be disinfected.

Adopted by 19 affirmative votes, with 3 abstentions (Great Britain, India, Mexico).

49. The passengers and crew of the vessel will be kept under observation for five days.

Adopted by 13 affirmative votes (Germany, Austria, Denmark, Hungary, France, Japan, Italy, Holland, Portugal, Russia, Sweden, Norway, Switzerland), against 9 negative (Brazil, Spain, United States, Great Britain, India, Mexico, Roumania, Servia, Turkey).

I.—The passengers and crew will be subjected to an observation of ten days, which will commence at the date of the last case of cholera.

Rejected by 16 votes against 5 (Brazil, Denmark, Spain, Japan, Mexico), and 1 abstention (Turkey).

K.—The passengers and crew will be subjected to an observation of ten days.

Rejected by 15 against 7 (Brazil, Denmark, Spain, Mexico, Roumania, Servia, Turkey).

50. The sick will be isolated and placed in care of and under the responsibility of the physicians.

Adopted by 18 against 1 (Brazil), with two abstentions (Great Britain, India).

L.—The sick will be placed in quarantine, and left to the care and at the disposition of the physicians.

Rejected by 14 against 4 (Brazil, Spain, Mexico, Servia), with 4 abstentions (Great Britain, Portugal, Roumania, Turkey).

*Small vessels.**

51. Small vessels which come from the Indian Ocean and enter the Red Sea only, landing passengers at ports in this sea, should be treated in the same manner as large vessels under the same circumstances. When they only pass through this sea going from the Indian Ocean to the Mediterranean they will be subjected to a double inspection—one at the entrance to the Red Sea, the other at Suez. If they are free from infection they may continue their route; if they have had cases of cholera on board they will be treated in the same manner as the "large vessels"† which are infected.

Adopted by 17 against 1 (Spain), with 4 abstentions (Brazil, Great Britain, India, Turkey).

PILGRIMAGE TO MECCA.

It is desirable that each pilgrim should possess the resources necessary to preserve him from want during his pilgrimage to Mecca, a regulation which is in conformity with the provisions of the Mohammedan religion, and which has been adopted by the Government of the Dutch East Indies. This measure will prevent distress (*la misère*), which is one of the most important causes of the extension of cholera among the pilgrims.

Adopted unanimously.

53. Every pilgrim ship and every caravan should be accompanied by a sufficient number of physicians, designated by the Government of the country from which the expedition starts.

Adopted unanimously.

54. A ship will be considered a "pilgrim ship" if it has on board more than thirty pilgrims.

Adopted unanimously.

55. In those ports where cholera exists the ship will be cleaned and disinfected before the embarkation of the pilgrims, and will be inspected by its physician, and also by the sanitary authority of the port. The physician of the ship will examine each person, and will only admit such as are free from cholera and free from suspicion of this malady. He will see that no infected or suspected clothing, personal effects, bedding, or other articles are brought on board. All articles coming from infected or suspected localities will be disinfected before they are brought on board. Clothing and bedding which have been in use by cholera patients will never be received on board.

* That is, all vessels not having a physician on board.—TRANSLATOR.

† That is, those having a physician on board.—TRANSLATOR.

If cholera manifests itself on board the ship, the sick will be immediately sent to the hospital, and the locality which they occupied upon the ship will be at once disinfected.

Adopted unanimously.

56. The sanitary authority of the port of departure and the physician of the ship will see to it that the ship is not overcrowded. A steamship should have between decks, for each passenger, at least 9 feet of surface and 54 cubic feet of space. On sailing vessels each passenger should have 12 feet of surface and 72 cubic feet of space.

Adopted unanimously.

57. During the voyage the ship's physician will see that a rigorous cleanliness and active ventilation are maintained, and that all soiled or dirty linen is washed and disinfected at once, and that the closets are washed and disinfected at least twice a day.

Adopted unanimously.

58. In general, all the measures adopted by the British Government in India relating to the embarkation and transportation of pilgrims from India on the Red Sea are recommended for the adoption of all countries from which pilgrims depart.

Adopted unanimously.

59. Every pilgrim ship arriving in the Red Sea will stop at the sanitary station, where it will be subjected to a rigorous medical inspection. The inspection of the passengers and crew will be made on shore. The ship and the effects of the passengers and crew will be disinfected, the captain will then take the necessary measures to insure the complete cleansing of the ship, the washing of the effects of the passengers and crew.

If the ship's doctor certifies that all necessary measures of sanitation and of disinfection have been taken before sailing; that the measures of sanitation and disinfection have been observed during the voyage; that there has not been during the voyage any death from cholera, or any recognized or suspected case; finally, if the medical examination, made twice within twenty-four hours, by the physician of the sanitary station, shows that there is no case of cholera and no suspicious case, the passengers and crew may be re-embarked and the vessel may proceed to its destination at Hedjaz.

If the ship is without a physician, or if there have been cases of cholera, or suspected cases, on board during the voyage, or if cases occur after the arrival of the vessel at the sanitary station, it will be isolated for five days and disinfected, together with all the effects of the passengers and crew. The passengers and crew will be isolated upon land for five days. The sick and suspected persons will be isolated in separate groups. The well will be divided into groups, each of which will be permitted to re-embark at the expiration of five days since it has been separated from the last case of the disease, if there have been any.

The ship will be permitted to proceed to its destination at Hedjaz, when all of the groups of passengers have been re-embarked, with the exception of those who have been isolated because of contamination and who have not yet been subjected to the period of detention fixed.

Adopted by 16 against 5 (Brazil, Spain, Mexico, Servia, Turkey).

A proposition identical with the preceding, with the exception of the thirteenth line, was voted upon and rejected.

M. If the ship is without a physician, or if there have been cases of cholera, or suspected cases, on board during the voyage, or if cases occur after the arrival of the vessel at the sanitary station, it will be isolated for *seven* days, &c.

Rejected by 17 votes against 5 (Brazil, Spain, Mexico, Servia, Turkey).

60. Upon its arrival at Hedjaz, the ship will again be subjected to a rigorous medical inspection. A delay of twenty-four hours will be accorded to the physician of the port, if he judges it necessary, to enable him to formulate the result of his sanitary inspection. If the ship's physician certifies there has been no case, or suspected case, of cholera on board since the ship left the sanitary station, and if the inspection made by the physician of the port enables him to testify that there has been no death from cholera, and no case of this disease, the ship will be granted free pratique at once.

If, on the contrary, there have been cases, or suspected cases, the ship should immediately return to the sanitary station and there be subjected anew to all of the measures of observation, isolation, and disinfection described in the preceding article.

Adopted unanimously.

61. The physicians present, those who have been delegated or sent for this duty, as well as those who have arrived with the ships or with the caravans, will follow the pilgrims during the entire duration of their pilgrimage. They will be charged with insuring an efficient sanitary service which may prevent the development of cholera among the pilgrims, and if the disease appears they should care for the sick and notify the interested governments as promptly as possible.

Adopted unanimously.

62. It is absolutely necessary that sanitary measures be enforced in the localities where the pilgrims remain, and especially in the holy cities of the Hedjaz.

Adopted unanimously.

63. If there has not been a case of cholera during the entire duration of the pilgrimage the pilgrim ships will be subjected to a rigorous medical inspection at the port of embarkation. Ships destined for Egypt and those which are to pass through the canal to the Mediterranean will be subjected to a second inspection, the first in the Egyptian ports and the others (those destined for the Mediterranean) near Suez. This second inspection will decide whether these ships can be considered clean or if they should be subjected to observation and disinfection.

Adopted unanimously, with 2 abstentions (Great Britain, India).

64. If during the pilgrimage there have been cases of cholera, the ships destined for the ports of Egypt and of the Mediterranean will be sent to a sanitary station, where they will be subjected to an observation of five days, counting from the isolation of the sick, and the complete disinfection of their effects and of the ship, under the conditions indicated for infected or suspected ships upon their arrival. They will also be subjected to a second medical inspection at the port of arrival in Egypt or near Suez.

Adopted by 14 against 5 (Brazil, Spain, Mexico, Servia, Turkey), and 2 abstentions (Great Britain, India).

N. If there have been cases of cholera during the pilgrimage the ships destined for ports in Egypt or of the Mediterranean will be sent to the sanitary station, where they will be subjected to an observation of seven days, counting from the isolation of the sick and the complete disinfection of their effects and of the ship, under the conditions indicated for infected or suspected vessels upon their arrival. They will also be subjected to a second medical inspection at the ports of arrival in Egypt or near Suez.

Rejected by 16 negative votes against 5 (Brazil, Spain, Mexico, Servia, Turkey).*

65. Small vessels coming from the Indian Ocean and entering the Red Sea, if they carry pilgrims, will be subjected to the special *régime* prescribed for pilgrim ships.

Adopted by 17 against 1 (Spain), with 4 abstentions (Brazil, Great Britain, India, Turkey).

66. The technical commission has no authority to fix the places where the sanitary stations will be established. and those where the medical inspections will be made, but from the information at hand it appears that the island of Camaran for pilgrim ships coming from the south, Aioun Ouna and the coast of Attaka for those which return from the pilgrimage of Mecca and who are to land at ports in Egypt, or of the Mediterranean, present favorable conditions.

Adopted unanimously.

Sanitary Penal Code for the Red Sea.

67. The technical commission expresses the wish that the International Sanitary Conference may establish the basis of an international penal code applicable to contraventions of the sanitary regulations established for the Red Sea.

Adopted unanimously, with 2 abstentions (Great Britain, India).

§ 3.—SANITARY MEASURES AT THE PORT OF ARRIVAL.

Suspected vessels.

68. Free pratique will not be accorded until a sanitary inspection has been made, by daylight, by a physician of the port of arrival, which

* This proposition only differs from the preceding in making the time of observation seven days instead of five.—Translator.

inspection should establish the exact sanitary condition of the passengers and crew, and the fact that the necessary measures of sanitation and disinfection have been rigorously executed at the point of departure and during the voyage.

Adopted by 17 against 2 (Brazil, Spain); 2 abstentions (Portugal?).

69. The passengers will receive free pratique if there is not and has not been on board either death, or case, or suspected case, of cholera.

Adopted by 15 against 3 (Brazil, Spain, Mexico), and 3 abstentions (Denmark, Great Britain, India).

70. When the voyage has been of less than ten days' duration there will be an observation of twenty-four hours, and a disinfection on board of soiled linen and personal effects.

Adopted by 11 votes against 6 (Brazil, Spain, United States, Great Britain, India, Mexico), and 4 abstentions (Austria, Denmark, Servia, Turkey).

O. In case the voyage has been of less than ten days' duration there will be an observation of seven days, and a disinfection on board of soiled linen and personal effects.

Rejected by 12 votes (Germany, Austria, Hungary, United States, France, Great Britain, India, Italy, Sweden, Norway, Holland, Roumania), against 3 (Brazil, Spain, Mexico), and 6 abstentions (Denmark, Portugal, Russia, Servia, Switzerland, Turkey).

INFECTED SHIPS.

The sick.

71. The sick will be immediately removed to an isolated locality on shore.

Adopted unanimously, save 1 abstention (Turkey).

72. Disinfection will be practiced as already directed in the articles relating to disinfection.

Adopted unanimously.

Passengers and crew.

73. The passengers and crew will be isolated.

Adopted by 17 votes against 2 (Great Britain and India); and 2 abstentions (United States, and Russia).

74. This isolation will last for five days.

Adopted by 11 votes against 8 (Brazil, Spain, Great Britain, India, Mexico, Roumania, Servia, Turkey), and 2 abstentions (Denmark, United States).

P. This isolation will last for ten days.

Rejected by 13 votes against 7 (Brazil, Denmark, Spain, Mexico, Roumania, Servia, Turkey); 1 abstention (Portugal).

75. In case the physician of the ship is able to certify that there has not been a case of cholera on board for ten days, the observation may be reduced to 24 hours.

Adopted by 10 votes (Germany, Austria, France, Italy, Holland, Russia, Sweden, Norway, Switzerland) against 7 (Brazil, Spain, Mexico, Portugal, Roumania, Servia, Turkey), and 4 abstentions (Denmark, United States, Great Britain, India).

76. The passengers will be divided into groups, each containing as small a number as possible, so that if cases occur in one group the time of isolation will not be prolonged for all.

Adopted by 18 votes against 3 abstentions (United States, Great Britain, India).

77. The sanitary authority will adopt such measures of disinfection as may be necessary, and will prescribe the measures of prophylaxis which have been approved by this Conference.

Adopted by 18 votes, with 3 abstentions (Denmark, Great Britain, India).

Ships.

78. The ship will be disinfected in accordance with the directions given in the articles relating to disinfection. All of these measures of disinfection will be executed in presence of and under the responsibility of the chief sanitary authority of the port of arrival.

Adopted unanimously.

SPECIAL MEASURES FOR THE MEDITERRANEAN.

Suspected ships.

79. The passengers and crew will be landed in an isolated locality, provided with all of the conditions necessary to carry out the directions relating to disinfection and isolation.

Adopted by 10 votes (Brazil, Denmark, Spain, France, Italy, Mexico, Portugal, Roumania, Servia, Turkey) against 4 (Austria, Hungary, Great Britain, India), and 7 abstentions (Germany, United States, Holland, Russia, Sweden, Norway, Switzerland).

Q. It will not be necessary to land the passengers and crew if the journey has lasted more than ten days.

Rejected by 10 votes (Brazil, Spain, France, Italy, Mexico, Portugal, Roumania, Servia, Switzerland, Turkey) against 5 (Austria, Hungary, Denmark, Sweden, Norway), and 6 abstentions (Germany, United States, Great Britain, India, Holland, Russia).

80. This isolation will vary from three to six full days according to the condition of the ship, to whether it is a large steam vessel or a small ship, and to the fact of its having or not having a physician on board.

Adopted by 6 votes (France, Italy, Norway, Holland, Portugal, Switzerland) against 5 (Brazil, Spain, Mexico. Servia, Turkey) with, 10 abstentions (Germany, Austria, Hungary, Denmark, United States, Great Britain, India, Roumania, Russia, Sweden).

R. This isolation will vary according to the conditions of the ship, to whether it is a large steam vessel or a small ship, to the fact of its having or not having a physician on board. This isolation will last at least ten full days.

Rejected by 9 votes (Brazil, France, Italy, Holland, Portugal, Roumania, Sweden, Norway, Switzerland) against 4 (Denmark, Spain, Mexico, Turkey), and 8 abstentions (Germany, Austria, Hungary, United States, Great Britain, India, Russia, Servia).

S. This isolation will vary from five to seven full days, according to the condition of the ship, to whether it is a large steam vessel or a small ship, and to the fact of its having or not having a physician on board.

Rejected by 6 votes (France, Italy, Mexico, Holland, Sweden, Norway) against 5 (Brazil, Spain, Roumania, Servia, Turkey), and 10 abstentions (Germany, Austria, Hungary, Denmark, United States, Great Britain, India, Portugal, Russia, Switzerland).

81. The duration of the voyage will be deducted from that fixed for the period of isolation.

Adopted by 7 votes (France, Italy, Holland, Portugal, Sweden, Norway, Switzerland) against 6 (Brazil, Spain, Mexico, Roumania, Servia, Turkey), and 8 abstentions (Germany, Austria, Hungary, Denmark, United States, Great Britain, India, Portugal, Russia, Switzerland).

T. If the voyage has not lasted ten days free pratique will not be accorded until after an observation of seven days, during which the exact sanitary condition of passengers and crew will be ascertained, and soiled linen will be disinfected.

Rejected by 6 votes (France, Italy, Holland, Portugal, Sweden, Norway), against 4 (Brazil, Spain, Mexico, Turkey), and 11 abstentions (Germany, Austria, Hungary, Denmark, United States, Great Britain, India, Roumania, Russia, Servia, Switzerland).

Infected ships.

82. Infected ships will be subjected, in the ports of the Mediteranean to the general rules applicable to infected ships at the port of arrival.

Adopted by 12 votes against 2 (Spain, Mexico), and 7 abstentions (Brazil, Denmark, United States, Great Britain, India, Russia, Turkey).

U. When ships arrive in the Mediterranean the measures to be taken will differ when Europe is free from cholera from those to be taken when cholera already prevails.

In the first case, when the disease only prevails upon the southern shore of the Mediterranean, large vessels coming from one of the infected points upon this shore will be subjected upon their arrival to an isolation of seven days, including the duration of the voyage.

In the case of small vessels, the duration of the voyage will not be included in the period of isolation. This will be for seven full days. The local sanitary authority may, however, reduce this period to three days when the prescribed measures of sanitation have been observed at the port of departure and during the voyage.

Rejected by 10 votes (Germany, Austria, Hungary, Brazil, Spain, Great Britain, India, Mexico, Sweden, Norway) against 7 (Denmark, France, Italy, Holland, Portugal, Roumania, Servia), and 4 abstentions (United States, Russia, Switzerland, Turkey).

V. (*a*) When cholera is in the countries of the Mediterranean outside of Europe, and Europe is yet free from it.

Suspected ships.

Ships having had a voyage of more than ten days will receive free pratique at once, if during this time there has been no suspicious case of sickness or death on board, and if the medical inspection shows that the measures of sanitation and disinfection have been vigorously executed at the point of departure and during the voyage.

If the voyage has lasted less than ten days, but more than five days, free pratique will only be accorded after an observation of twenty-four hours, during which the exact sanitary condition of passengers and crew will be verified, and soiled linen will be disinfected.

If the voyage has lasted less than five days, the passengers and crew will, according to the advice of the physician, be isolated from two to five days, and disembarked if it is possible; during this time the exact sanitary condition of the passengers and crew will be verified, and soiled linen will be disinfected. The ship will be cleansed, and as far as possible disinfected.

Infected ships.

Infected ships will be subjected, in the ports of the Mediterranean, to the general regulations applicable to infected ships at ports of arrival.

(*b*) When cholera exists already in the European countries of the Mediterranean.

If cholera prevails only in certain localities, far removed from the port of arrival, either by land or water communication, the measures indicated in article *a* will be enforced.

If the disease prevails in a locality so near the port of arrival that communication is easy and direct, then the measures applicable to land routes should be applied.

Rejected by raising of hands.

SPECIAL MEASURES FOR THE SEA OF MARMORA, AND FOR THE BLACK SEA.

Suspected ships.

X. The passengers and crew will be landed at an isolated locality. This isolation will last ten full days.

Infected ships.

Infected ships will be subjected in the ports of the sea of Marmora and of the Black Sea to the general rules applicable to infected ships at ports of arrival, but the isolation will be for ten days.

Rejected by 6 votes (France, Italy, Holland, Russia, Sweeden, Norway) against 5 (Spain, Mexico, Roumania, Servia, Turkey), and 10 abstentions (Germany, Austria, Hungary, Brazil, Denmark, United States, Great Britain, India, Portugal, Switzerland).

SANITARY PROPHYLAXIS FOR THE CASPIAN SEA.

83. The measures established for other seas will suffice also for the Caspian Sea.

Adopted unanimously.

III.—SANITARY PROPHYLAXIS AGAINST YELLOW FEVER.

84. The measures recommended against cholera are, in general, applicable to yellow fever and to other diseases which prevail in epidemic form under the influence of bad sanitary conditions, and which are transmitted by human intercourse.

The most effective measures for preventing the propagation of diseases of this class are:

The sanitary improvement (*assainissement*) of cities and of vessels sailing from infected ports, isolation of the sick, and disinfection of infected or suspected articles and localities.

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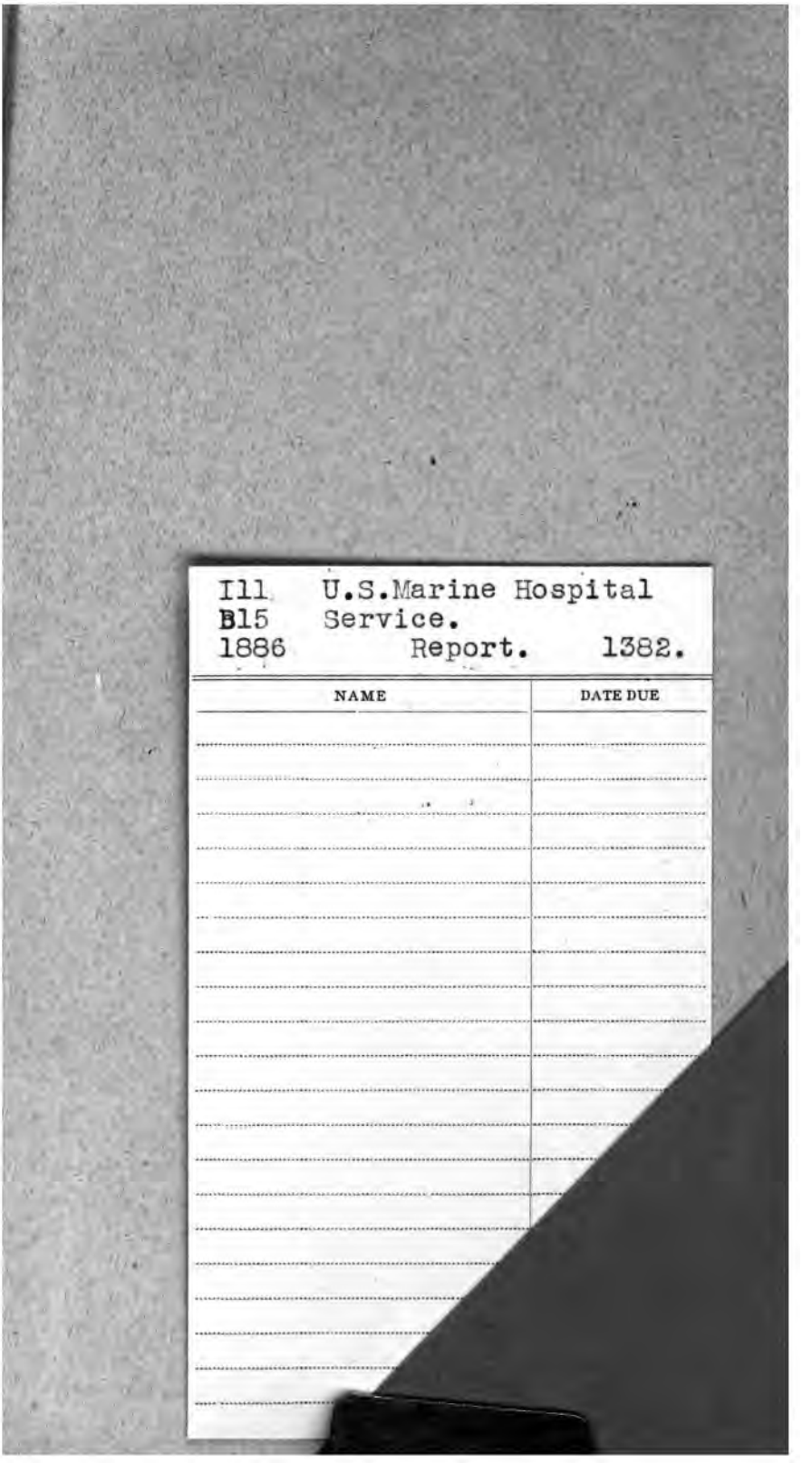
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